

# 2023 US Dairy Situation & Outlook

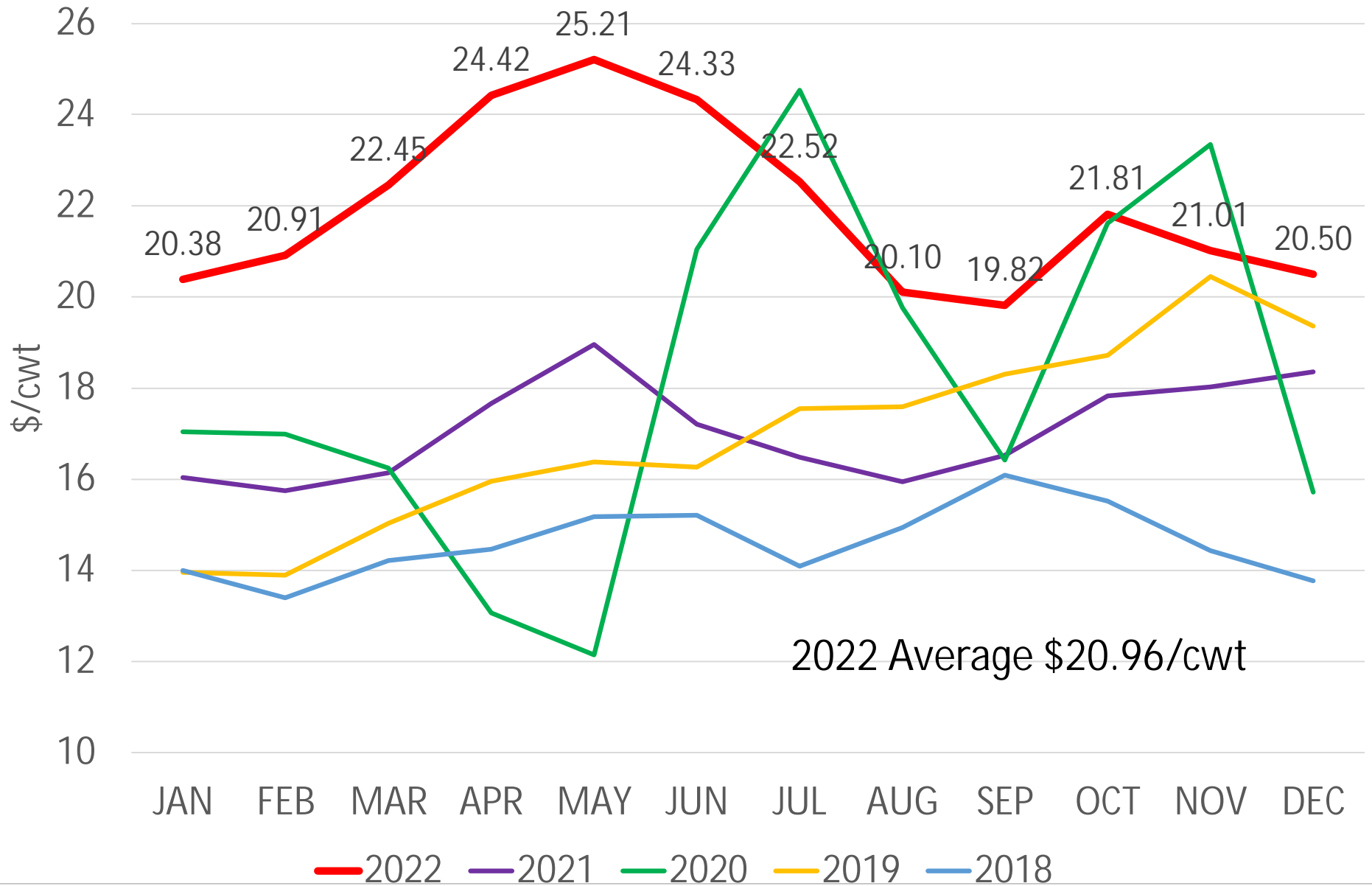
Christopher A. Wolf

E.V. Baker Professor of Agricultural Economics

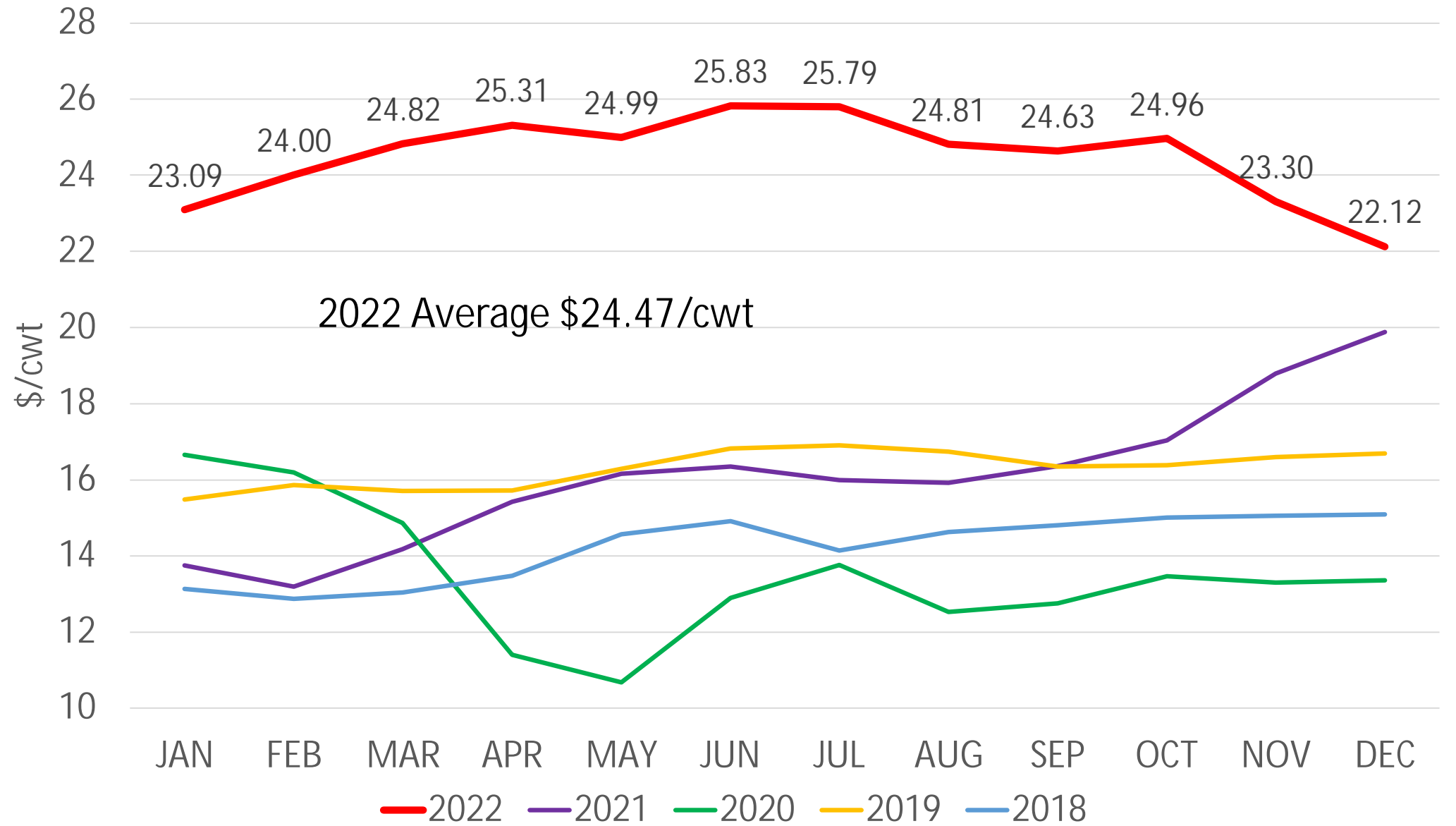
Dyson School of Applied Economics and Management

Cornell University

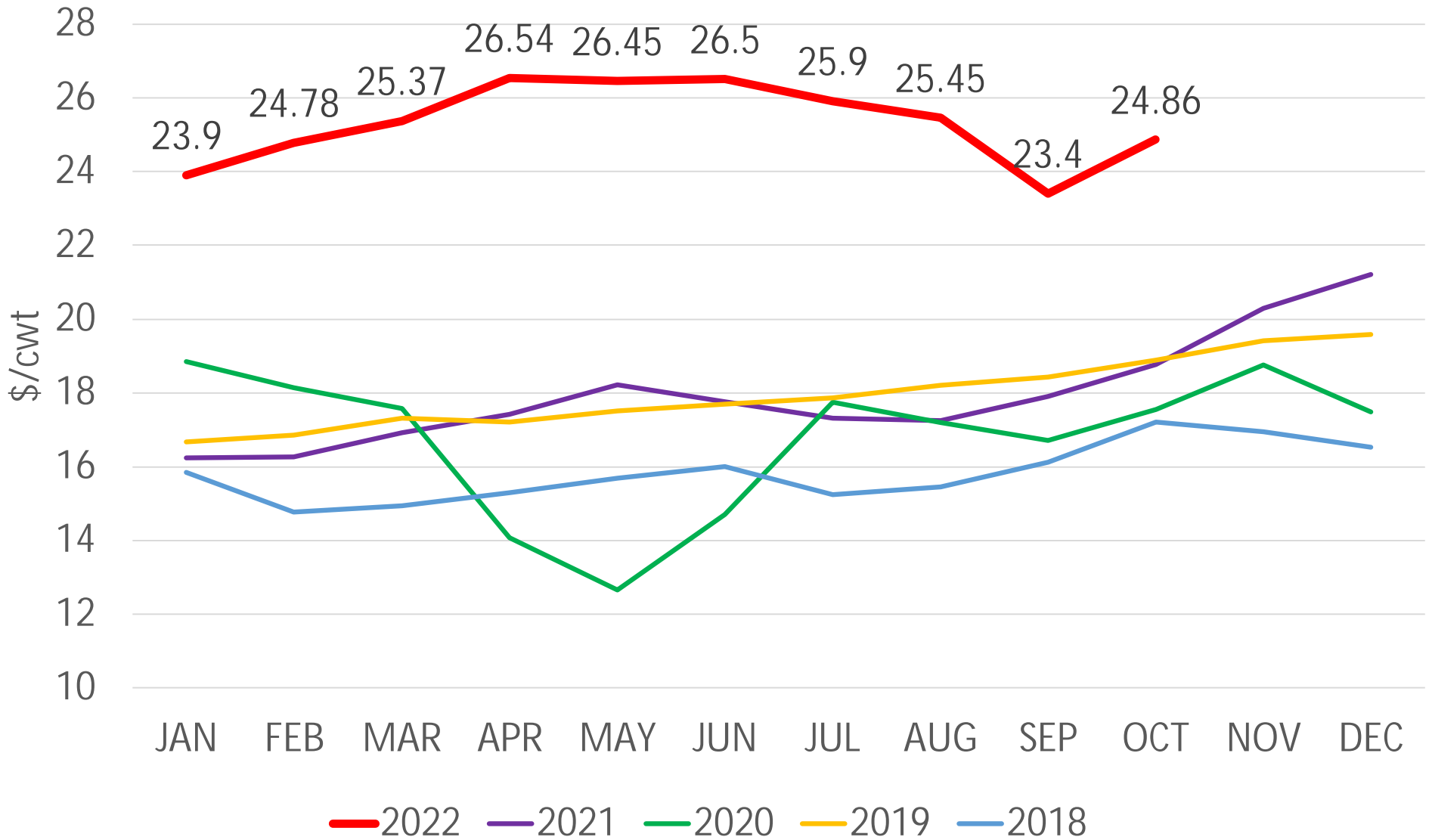
# 2022 Class III Price



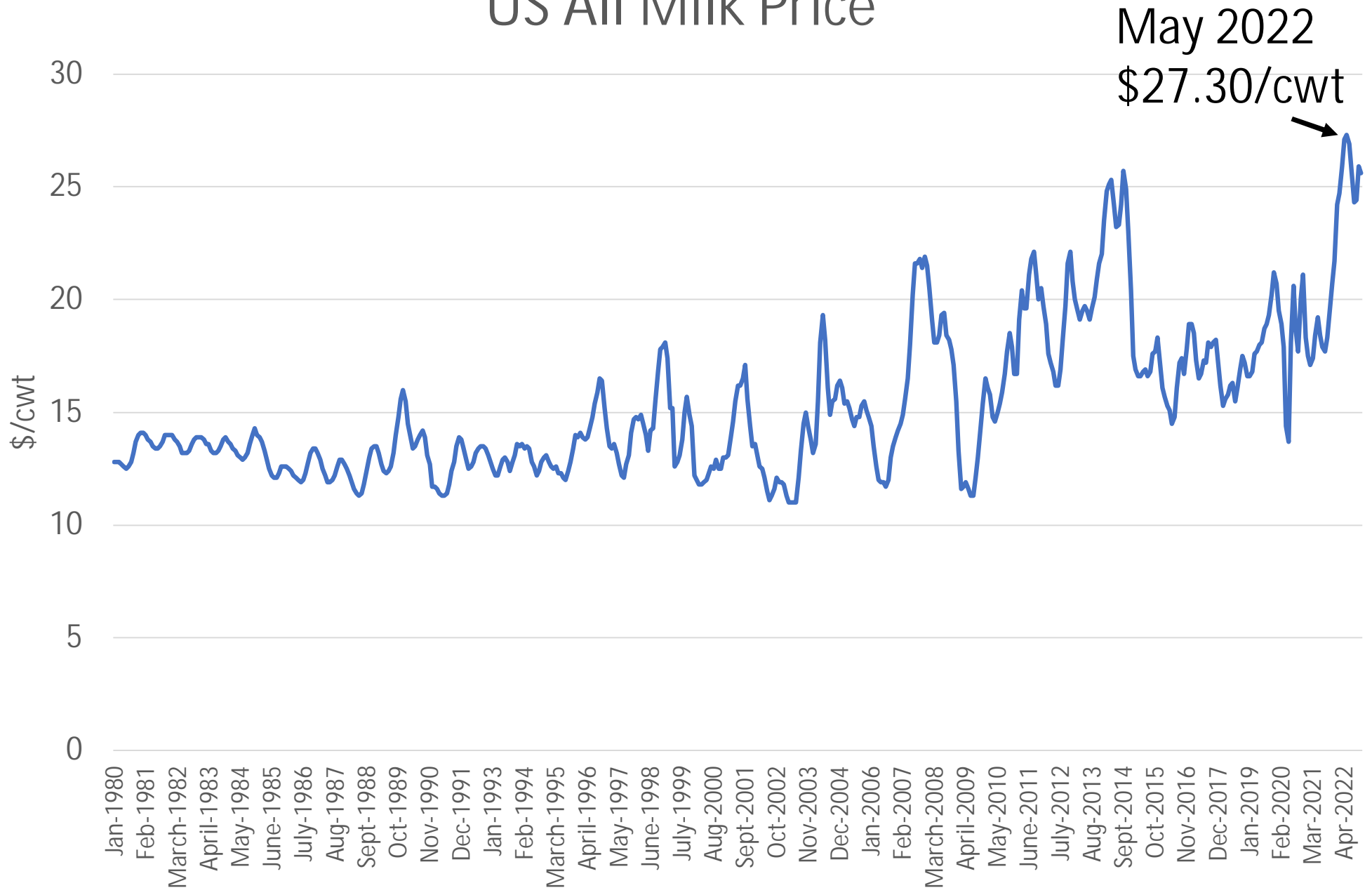
# 2022 Class IV Price



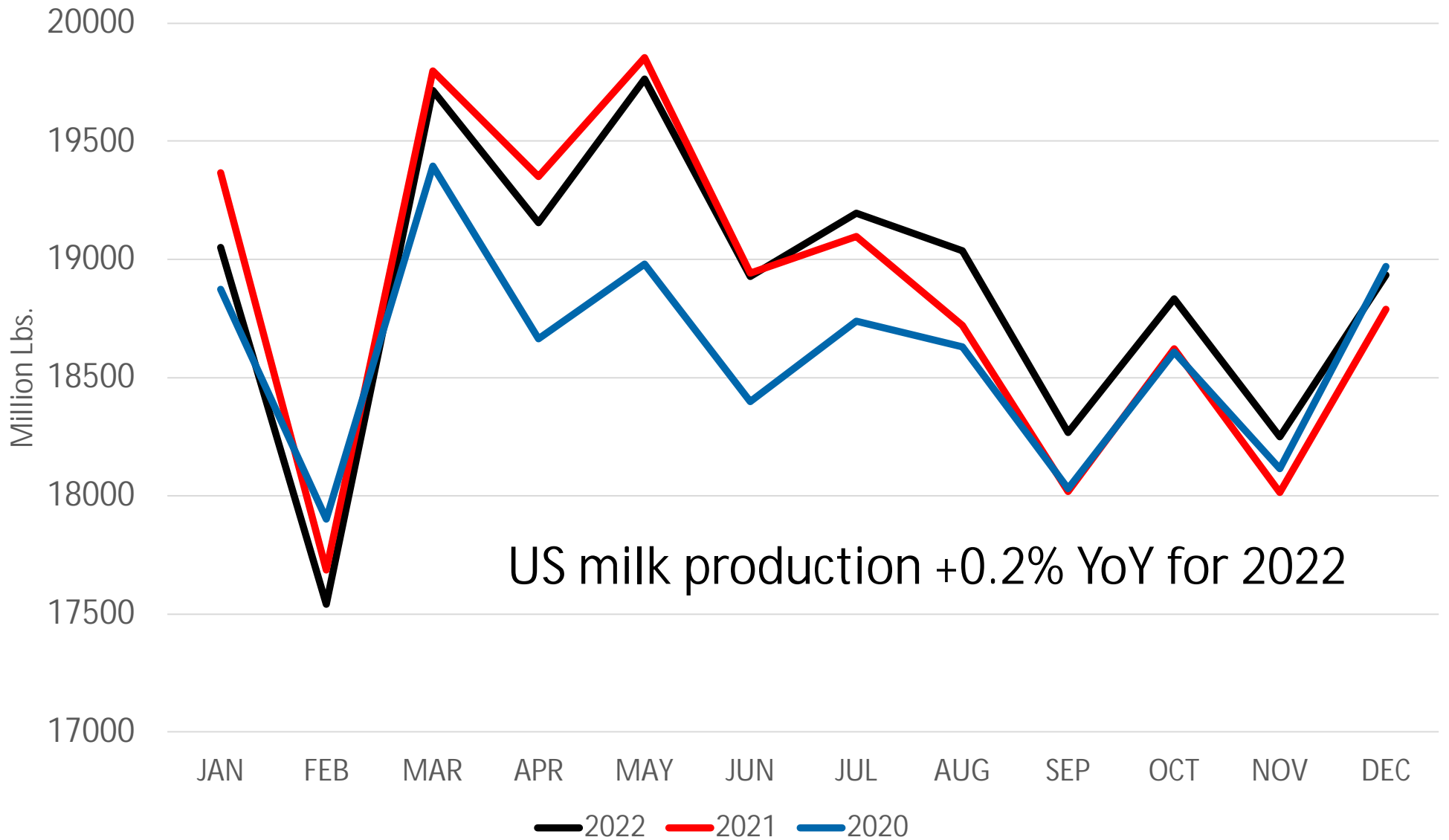
# 2022 NY Mailbox Price



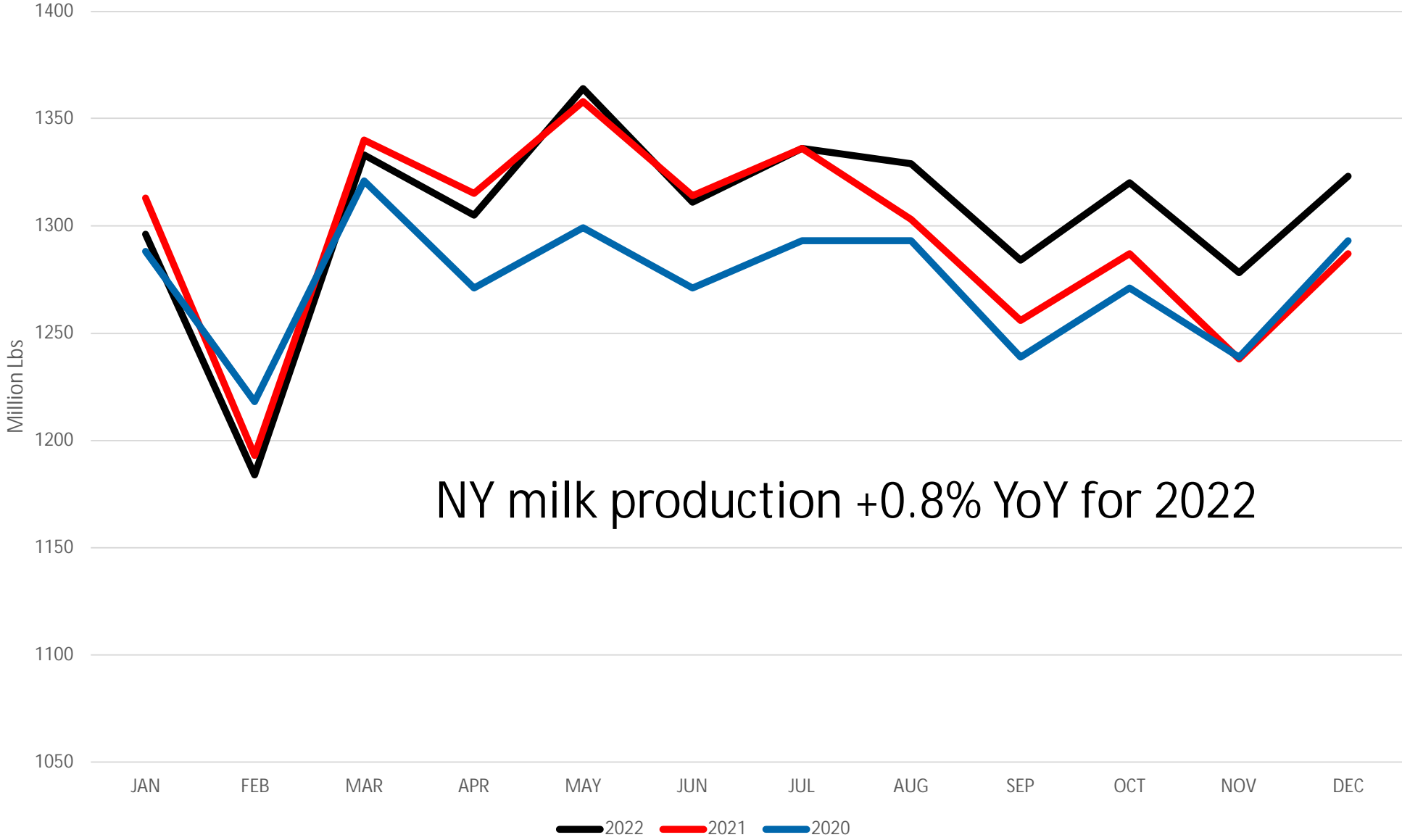
# US All Milk Price



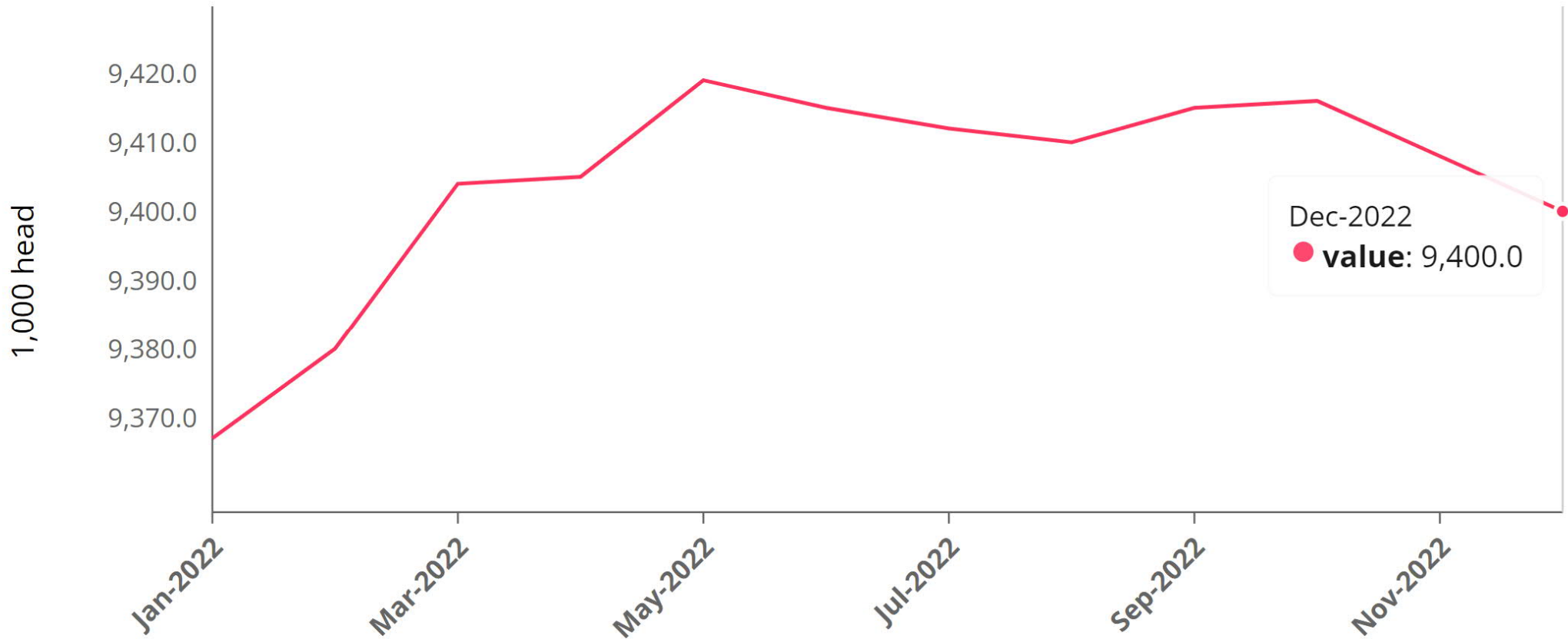
# US Milk Production



# New York Milk Production

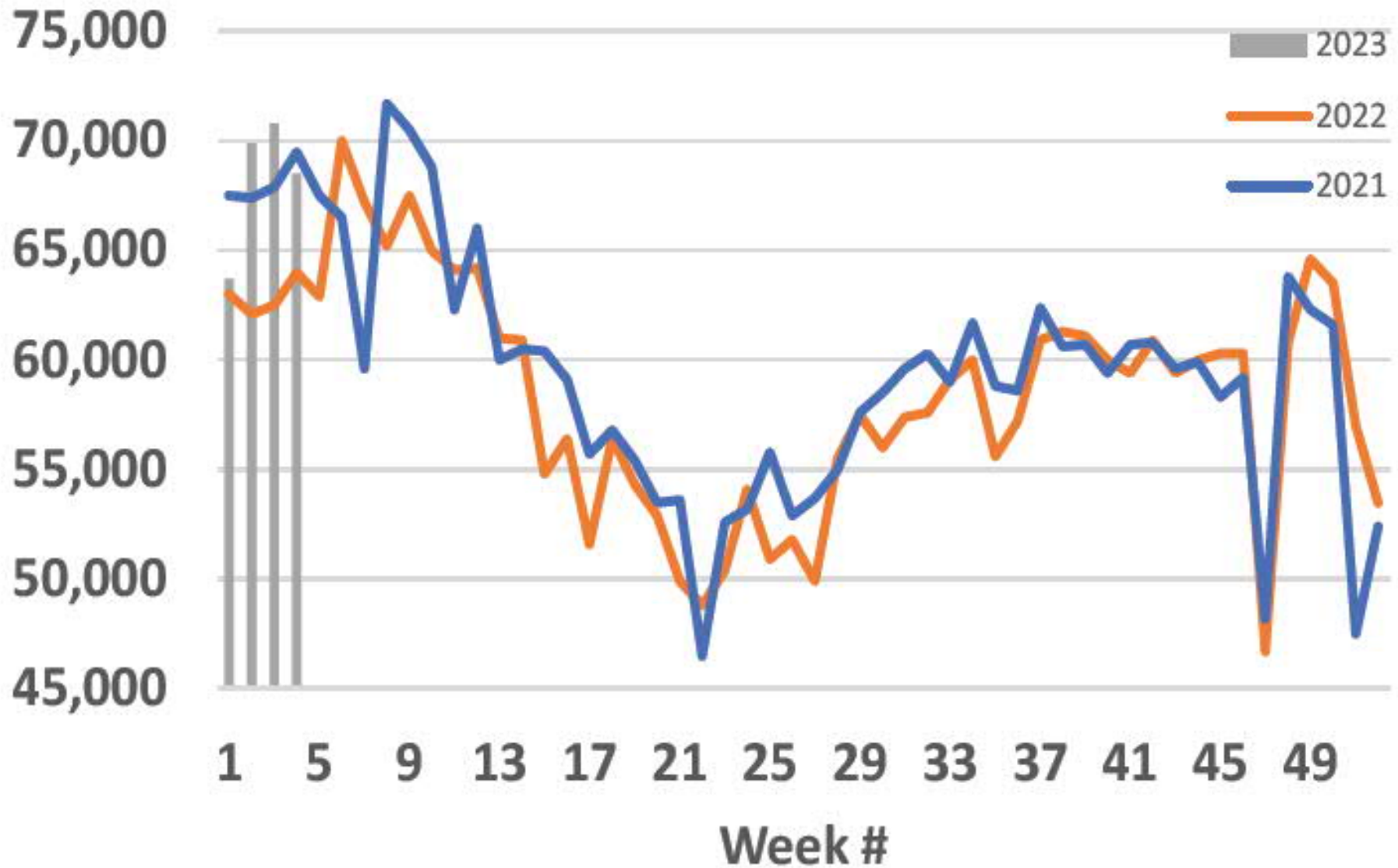


# US Milk Cows





# Weekly Dairy Cow Slaughter



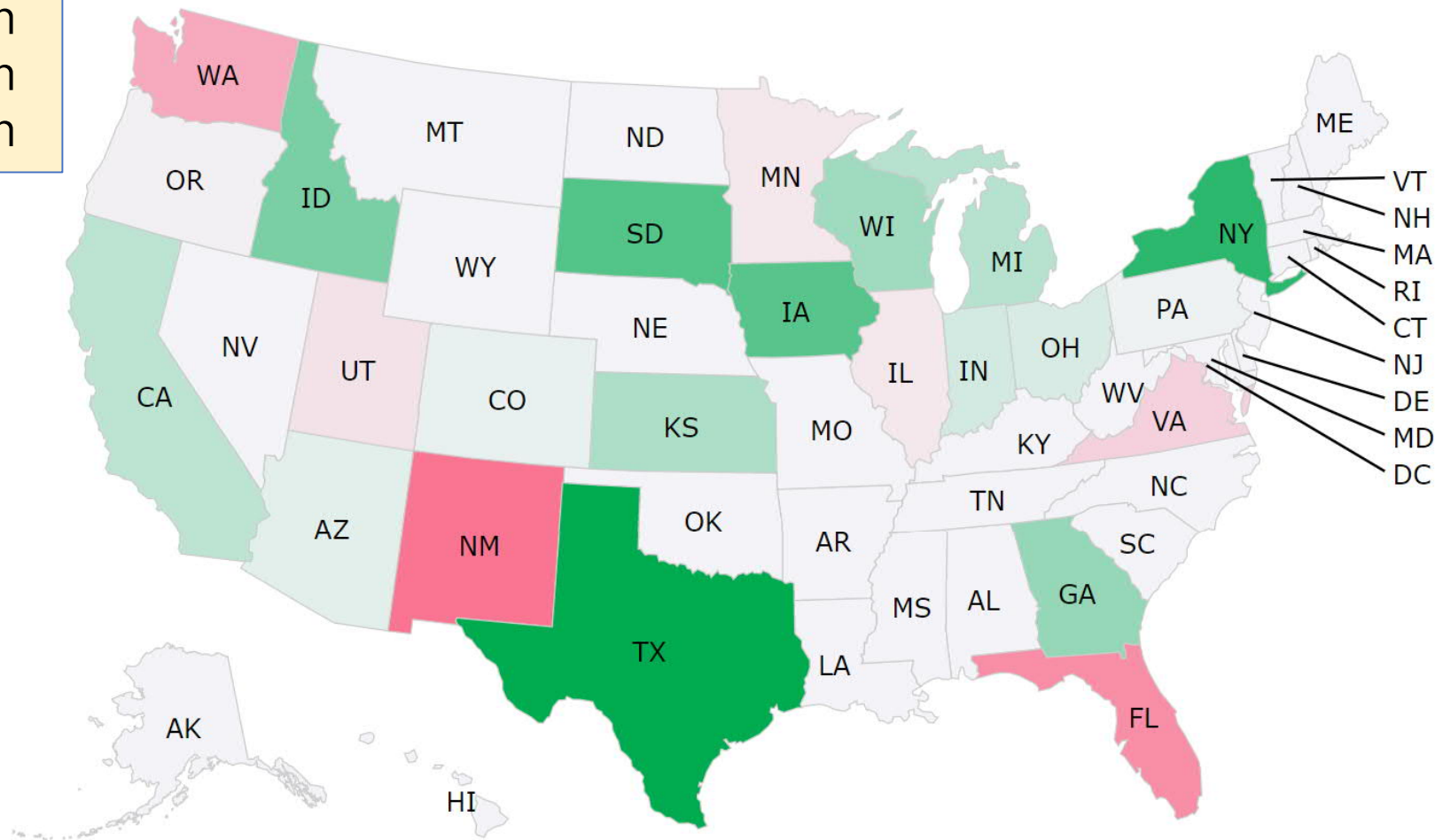
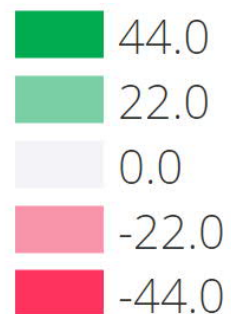
# Milk Production - United States

## U.S. States Map

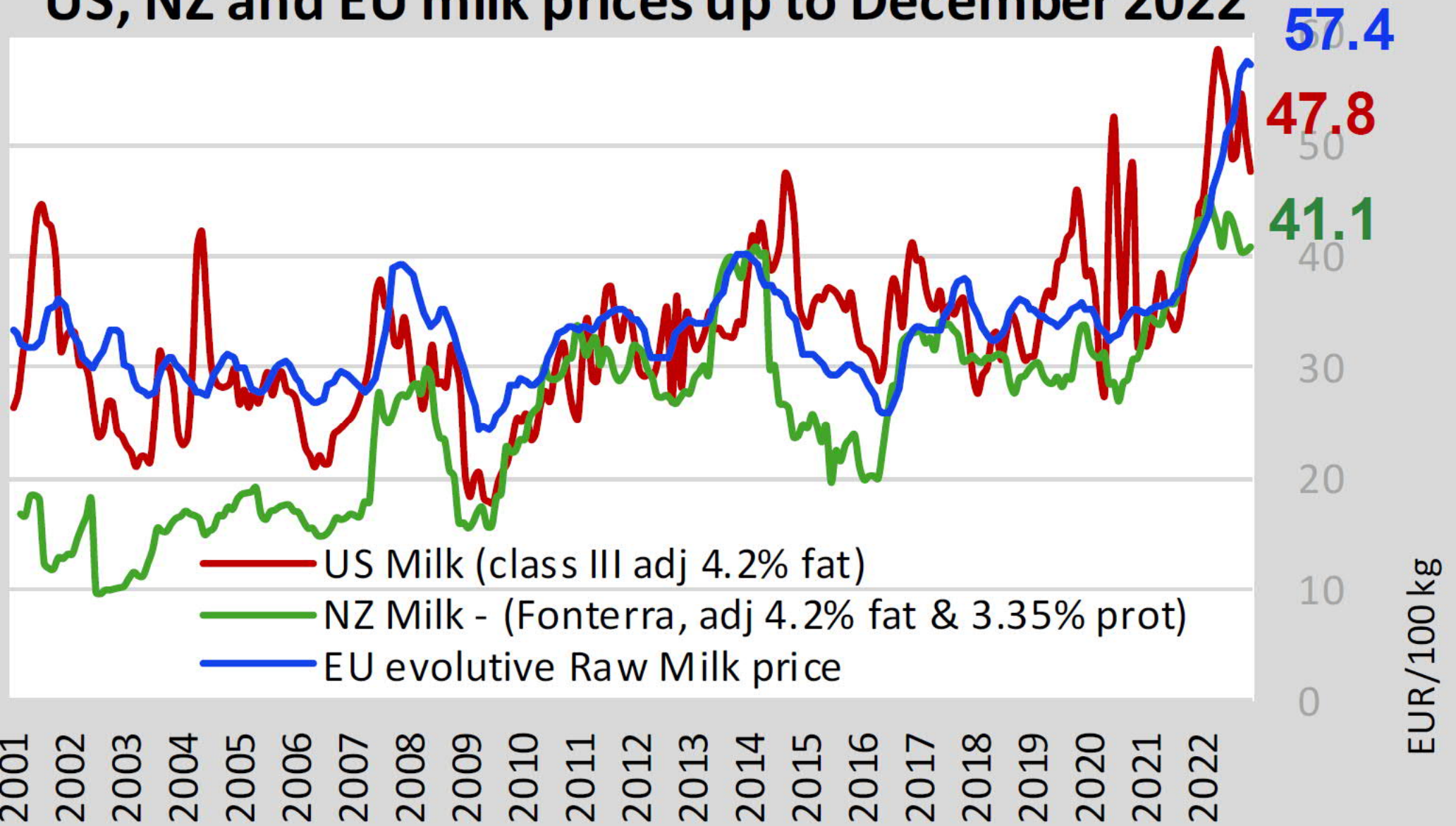
Supreme Alfalfa Hay  
December 2022

CA	\$390/ton
NY	\$320/ton
TX	\$334/ton
WI	\$196/ton

mil lbs

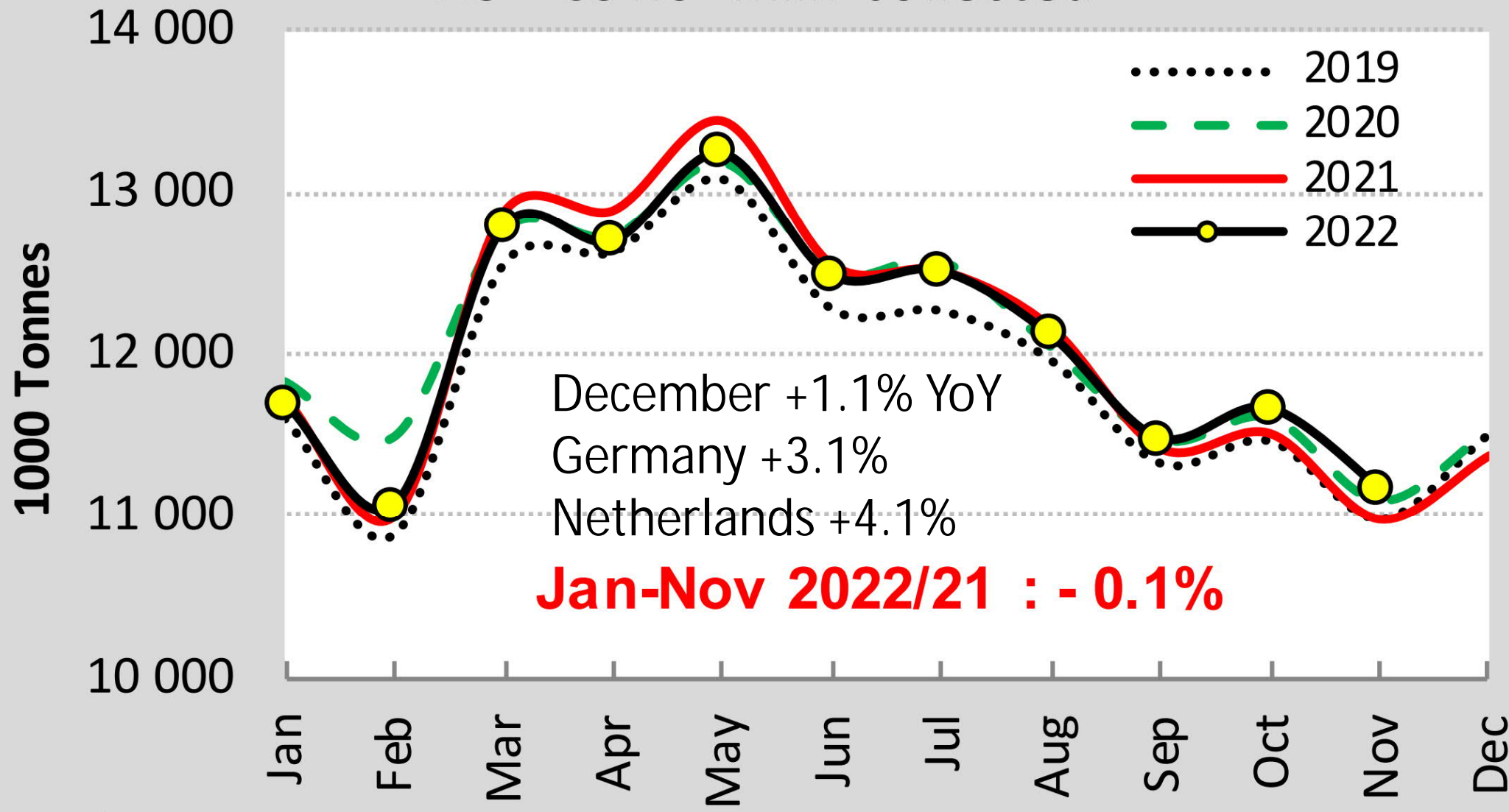


# US, NZ and EU milk prices up to December 2022



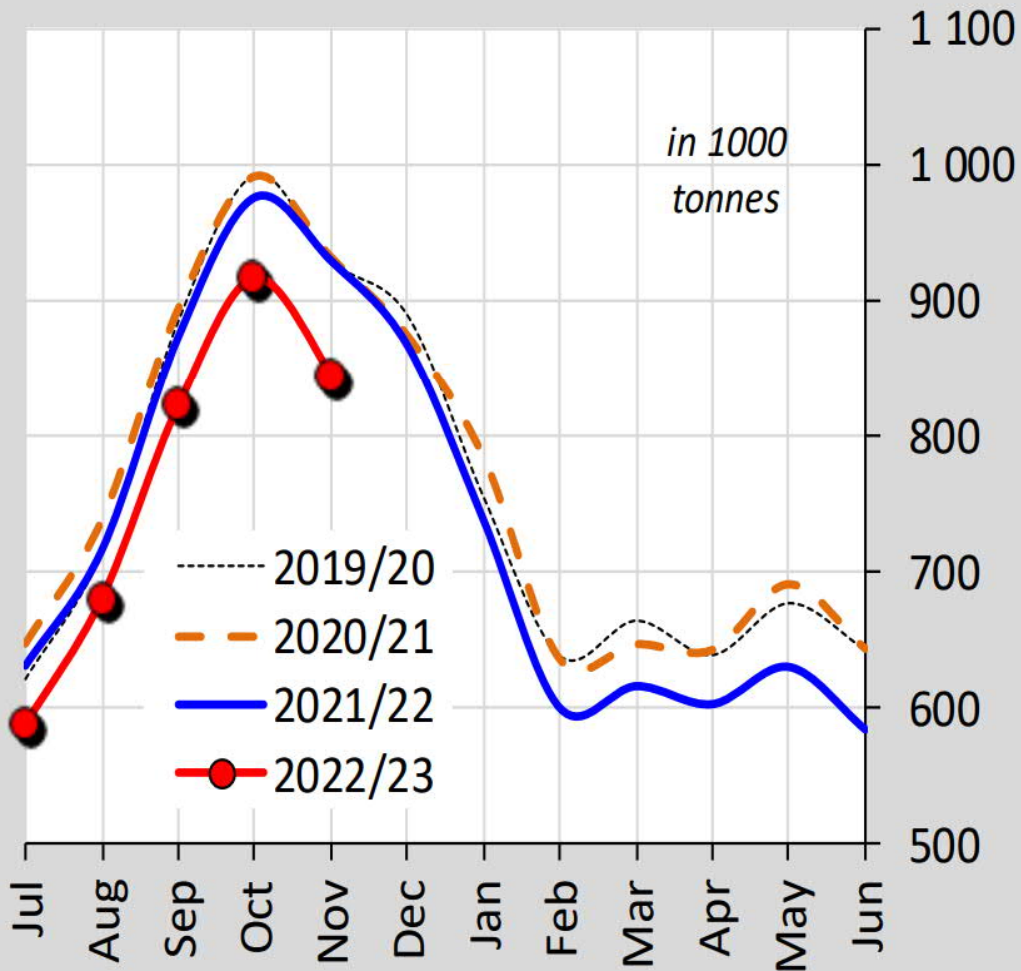
Source : DG AGRI, LTO Nederland

# EU - Cows' milk collected



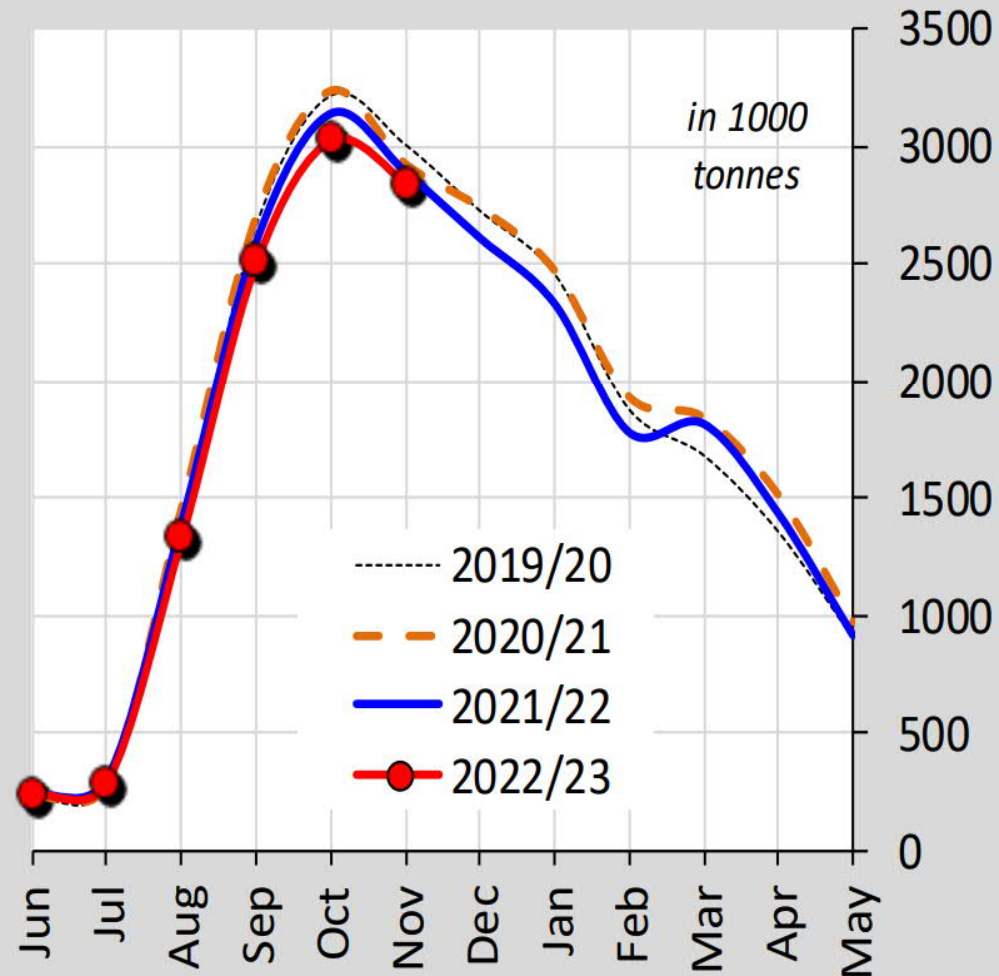
# Australian milk production

Jul-Nov 2022/23 compared to 2021/22 : - 6.7%



# NZ milk production

Jun-Nov 2022/23 compared to 2021/22 : - 3.1%

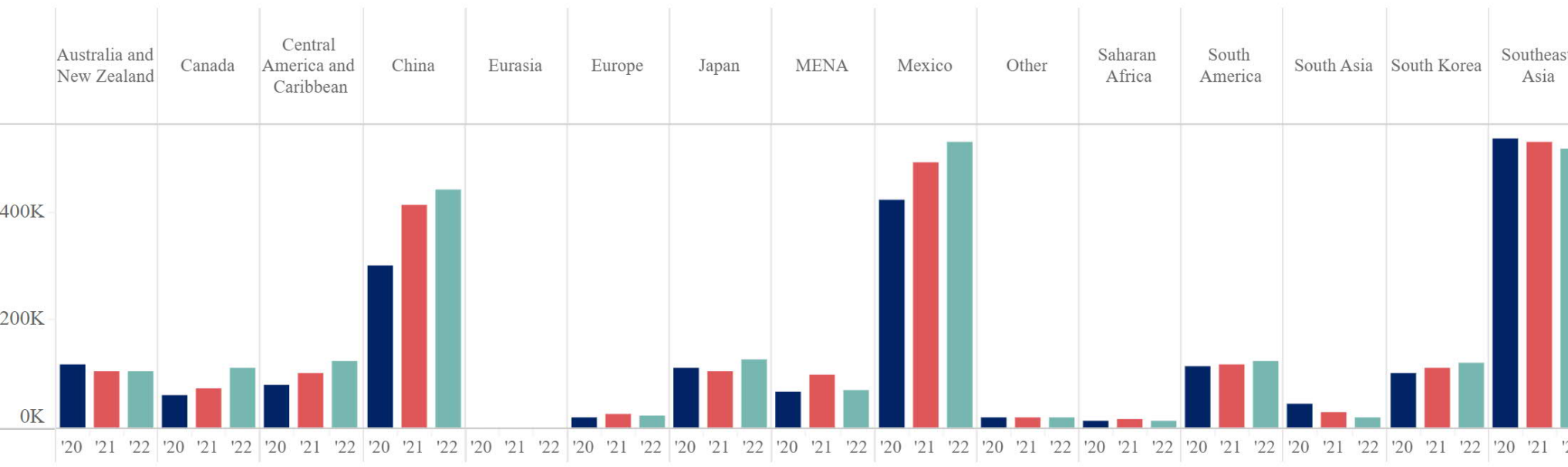


# US Dairy Exports

All Exports by Volume (Rolling 12-Month)



All Exports by Volume by Market, YTD - November



# US Dairy Exports

## Year-End U.S. Dairy Export Data

Category	2020	2021	2022	'21-'22 % Change	'21-'22 Vol Change	Unit
Total Export Value	\$6,541.1	\$7,702.7	\$9,614.3	25%	\$1,911.6	Million \$
Total Milk Solids	2,079,493	2,282,793	2,401,815	5%	119,022	MT MSE
SMP/NFDM	808,328	881,449	827,313	-6%	-54,136	MT
Dry Whey Products	555,117	614,005	667,201	9%	53,195	MT
Whey (0404-10)	497,111	549,931	601,907	10%	52,974	MT
WPC80+	57,906	64,072	64,294	0%	222	MT
Cheese	354,445	402,457	451,370	12%	48,913	MT
Lactose	375,902	389,824	452,438	16%	62,613	MT
WMP	38,392	39,121	38,671	-1%	-451	MT
Butterfat	25,894	56,986	81,721	43%	24,735	MT
MPC	41,529	40,888	47,434	16%	6,545	MT
Infant Formula	32,320	28,243	28,947	2%	704	MT
Evap/Cond	10,800	16,326	20,408	25%	4,082	MT
Casein	3,119	2,836	3,684	30%	847	MT
Fluid	133,016	150,113	150,917	1%	804	000 L

# US Milk Price Outlook

## • Demand

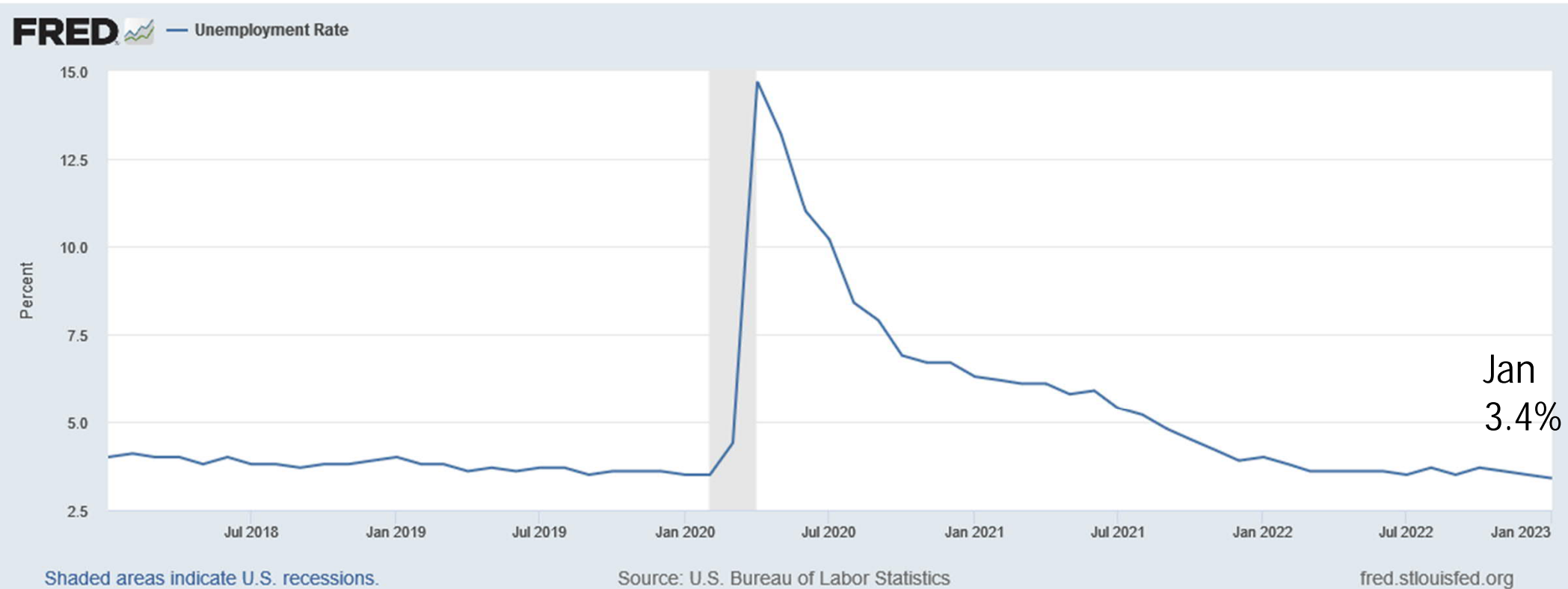
- US consumer income and spending
- International demand

## • Supply

- Feed/fertilizer prices
- Weather
- Stocks

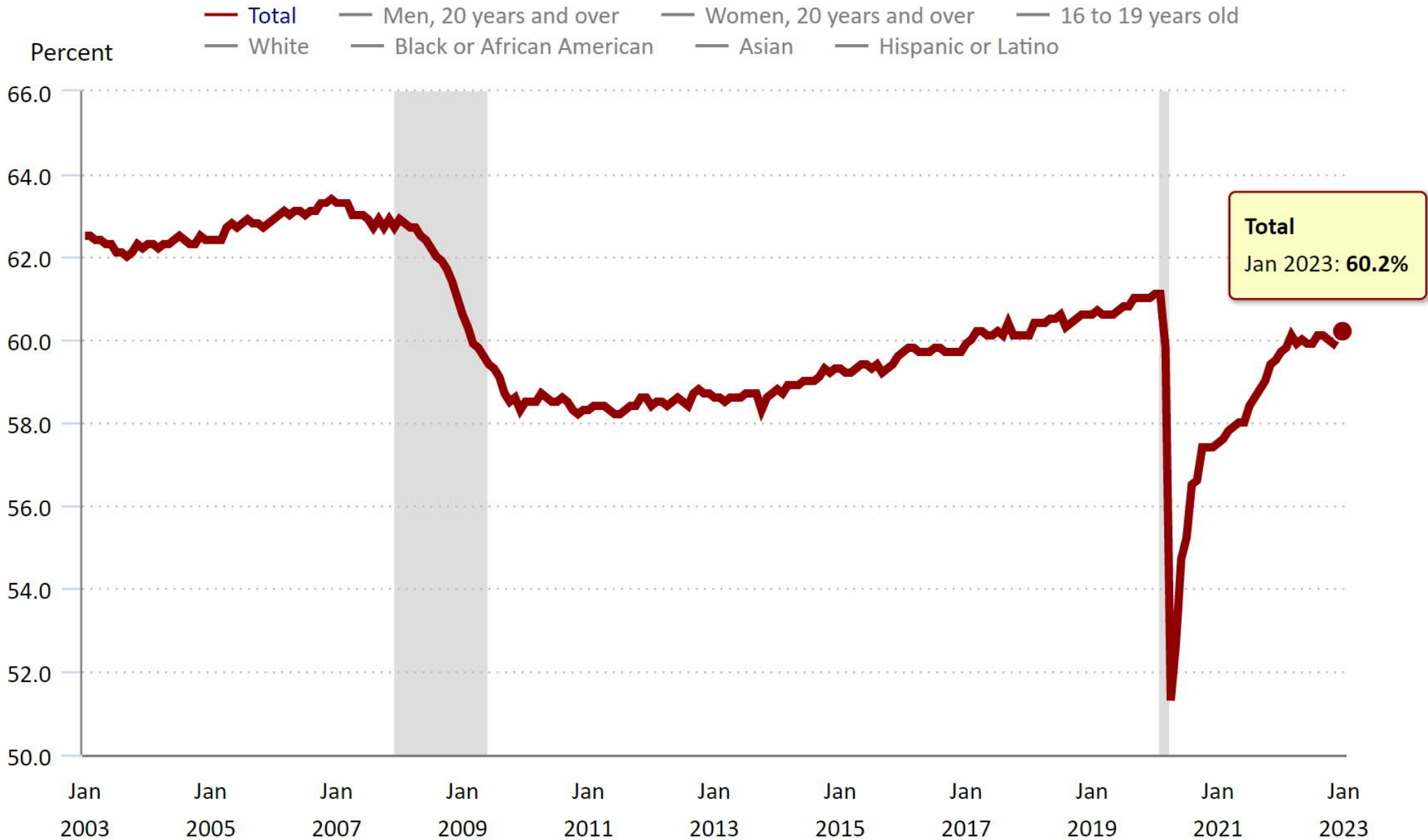


# Unemployment

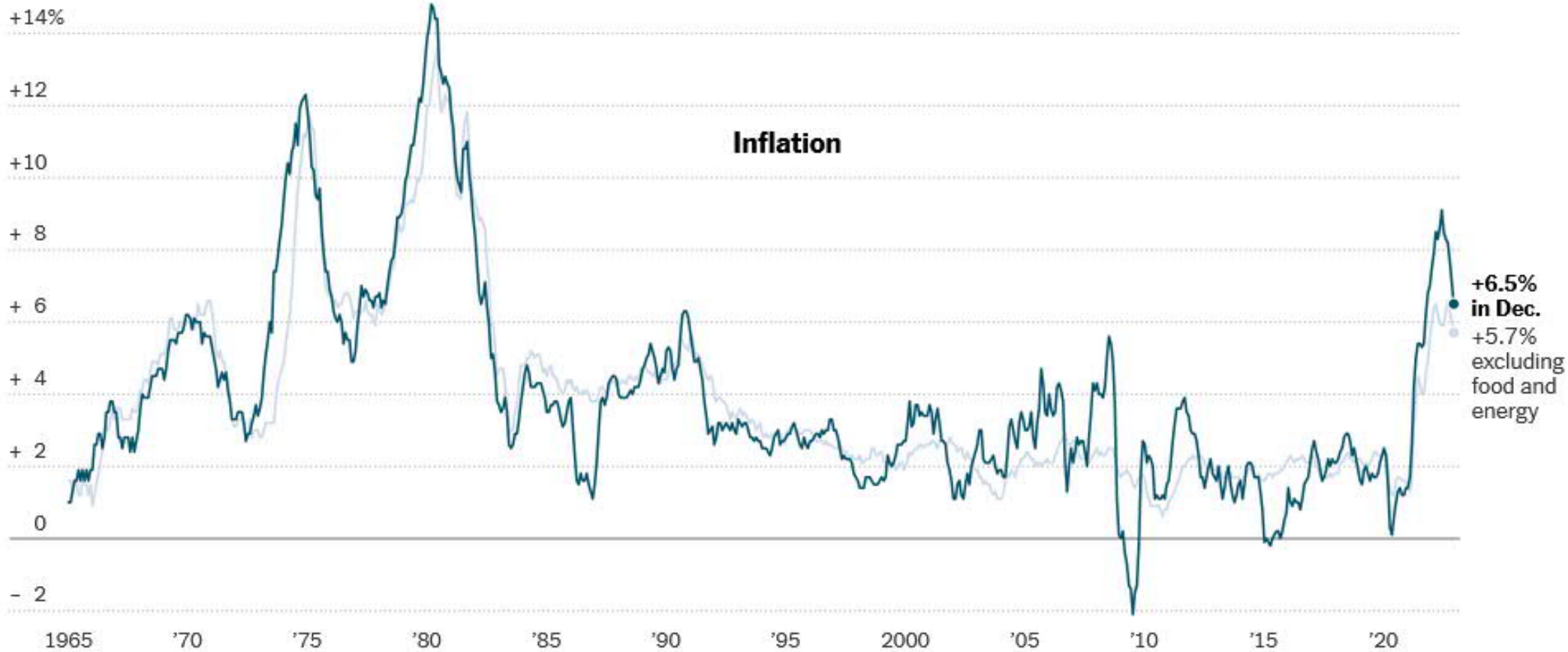


# Employment–population ratio, seasonally adjusted

Click and drag within the chart to zoom in on time periods



# Inflation

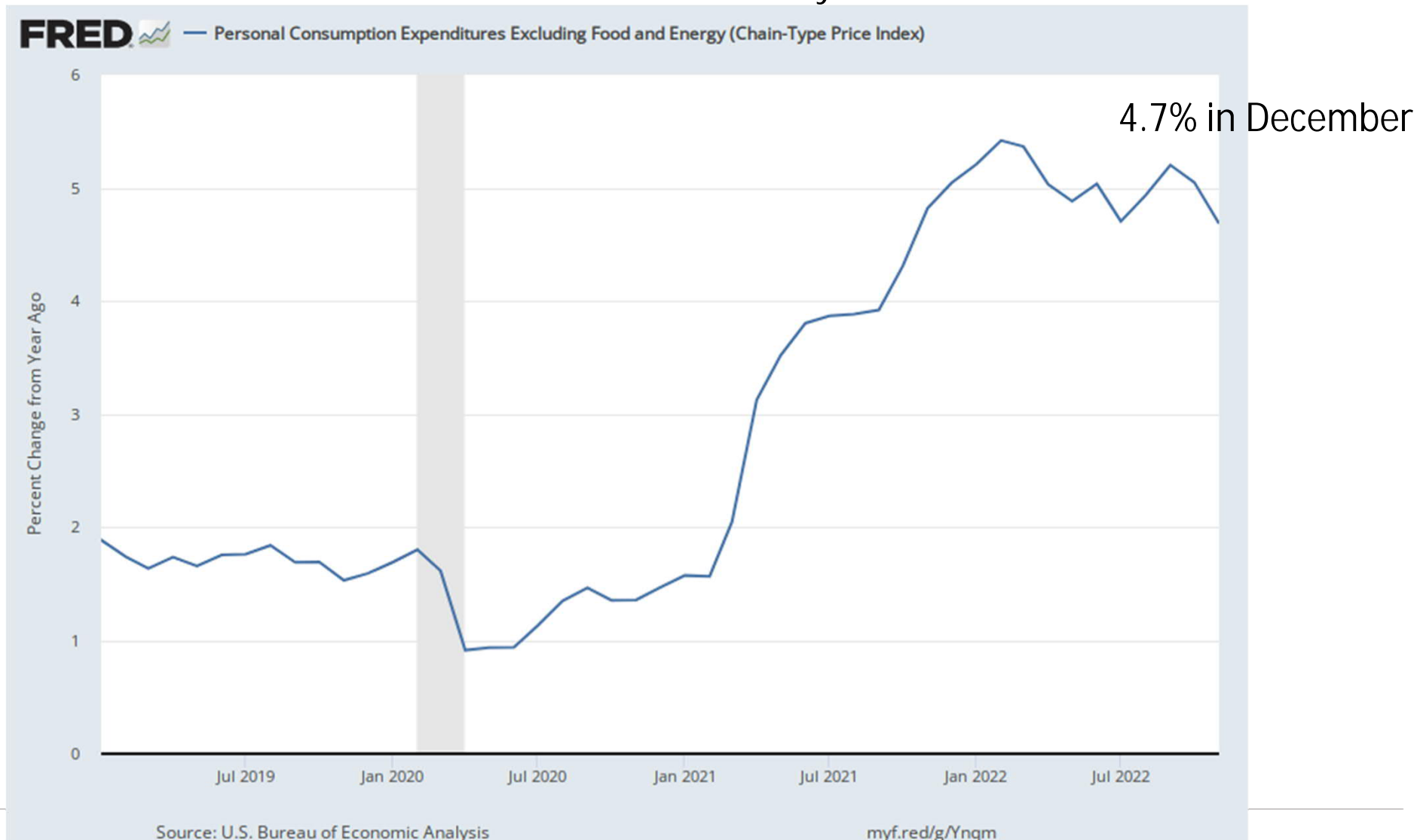


Year-over-year percentage change in the Consumer Price Index • Source: Bureau of Labor Statistics

<https://www.nytimes.com/live/2023/01/12/business/december-cpi-inflation-report>

# Core Inflation in Personal Consumption Expenditures

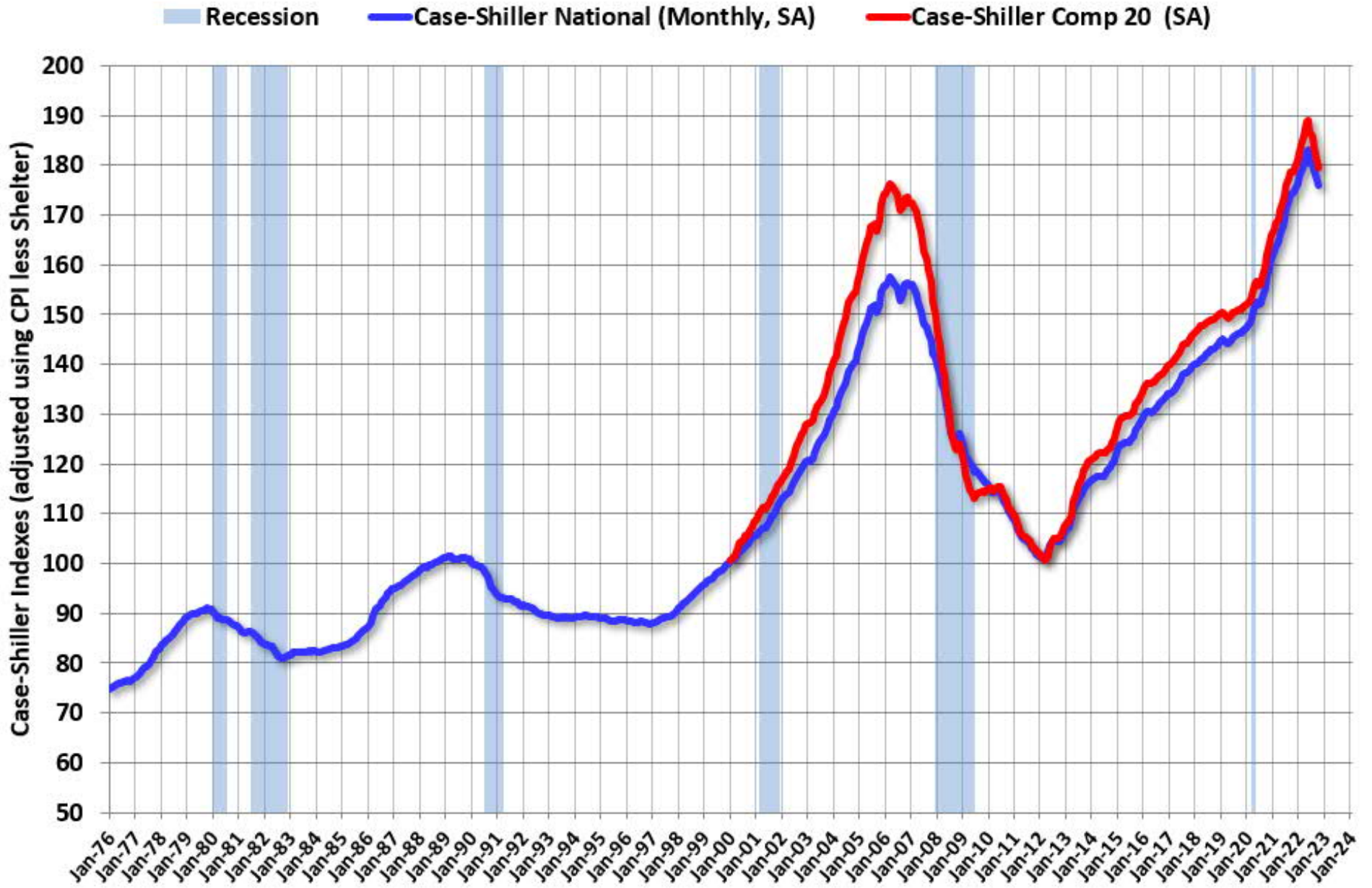
This is the one the Fed watches and which they want to be around 2%



Source: U.S. Bureau of Economic Analysis

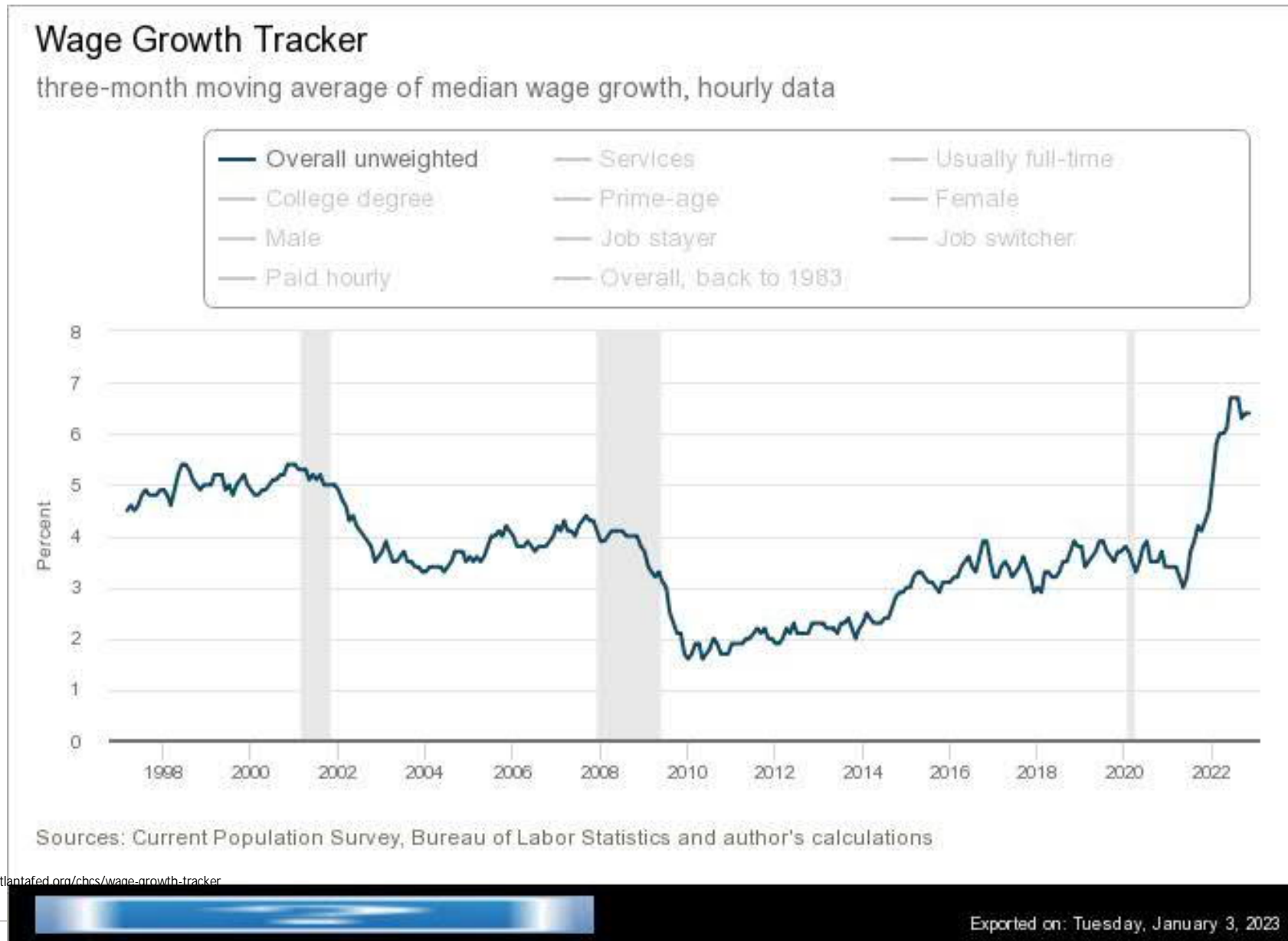
myf.red/g/Ynqm

# Real House Prices



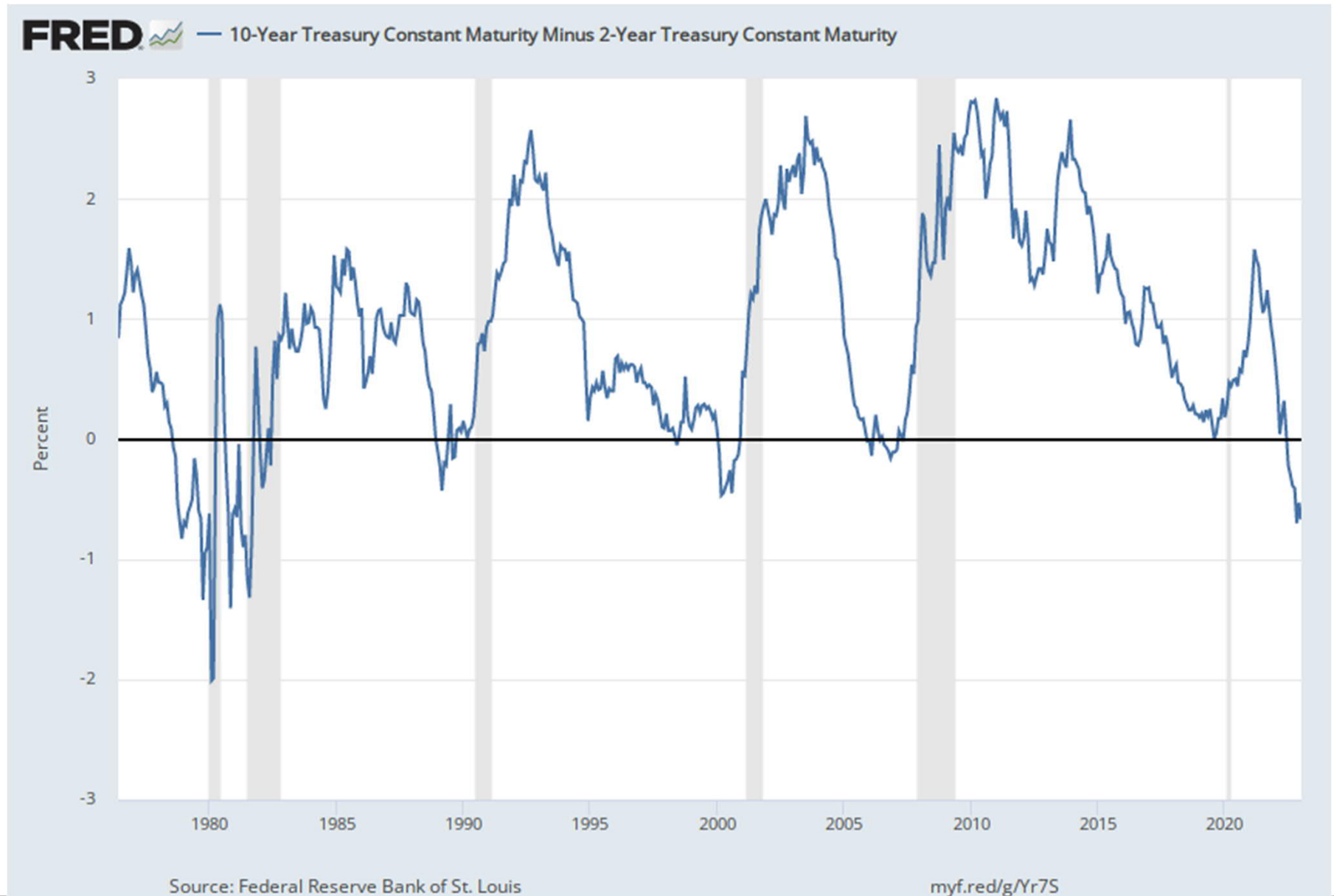
<http://www.calculatedriskblog.com/>

# Wage Growth Continues to be Strong



<https://www.atlantafed.org/chcs/wage-growth-tracker>

# 10-year bond minus 2-year bond rate

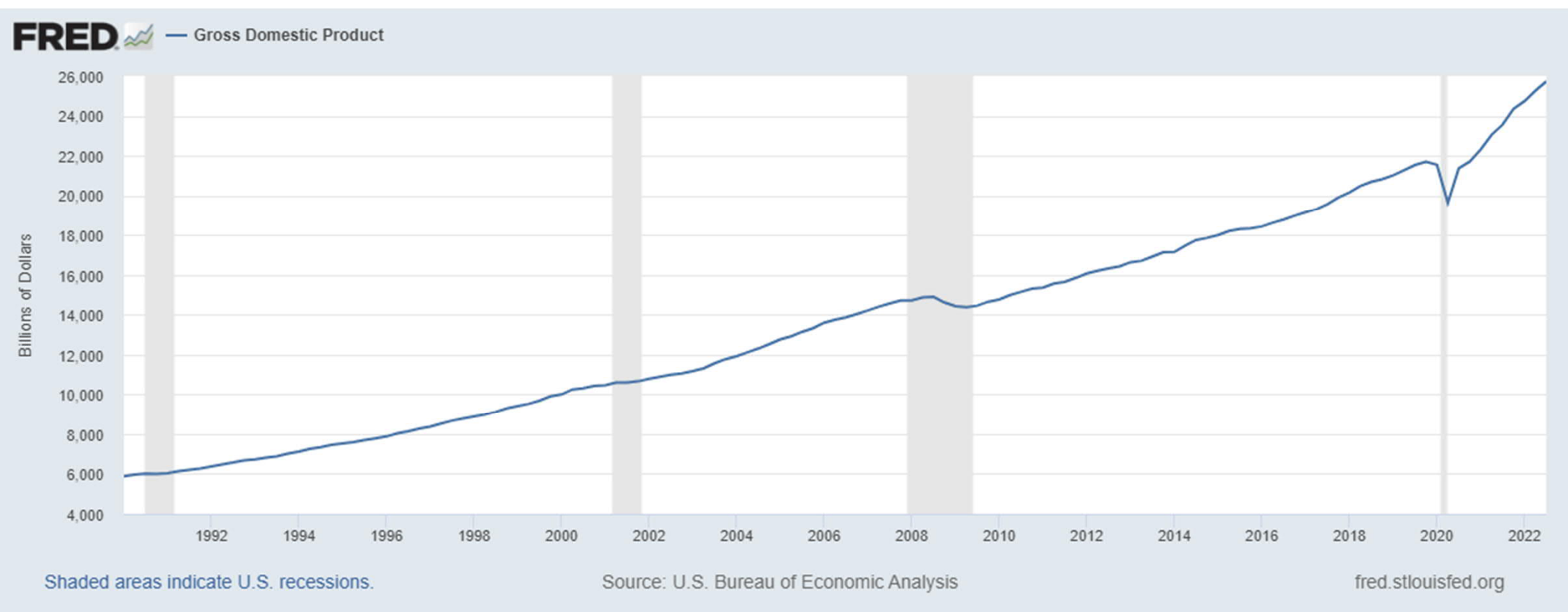


# US Recessions since 1990

Dates	Length	Cause	Peak Unemployment	GDP decline
July '90 – Mar '91	8 mos	Oil prices, inflation triggered interest increase	7.8%	-1.4%
Mar '01 – Nov '01	8 mos	Tech bubble	6.3%	-0.3%
Dec '07 – Jul '09	18 mos	Housing mortgage crisis	10.0%	-5.1%
Feb '20 – Apr '20	2 mos	COVID	14.7%	-19.2%



# Recessions → less eating out



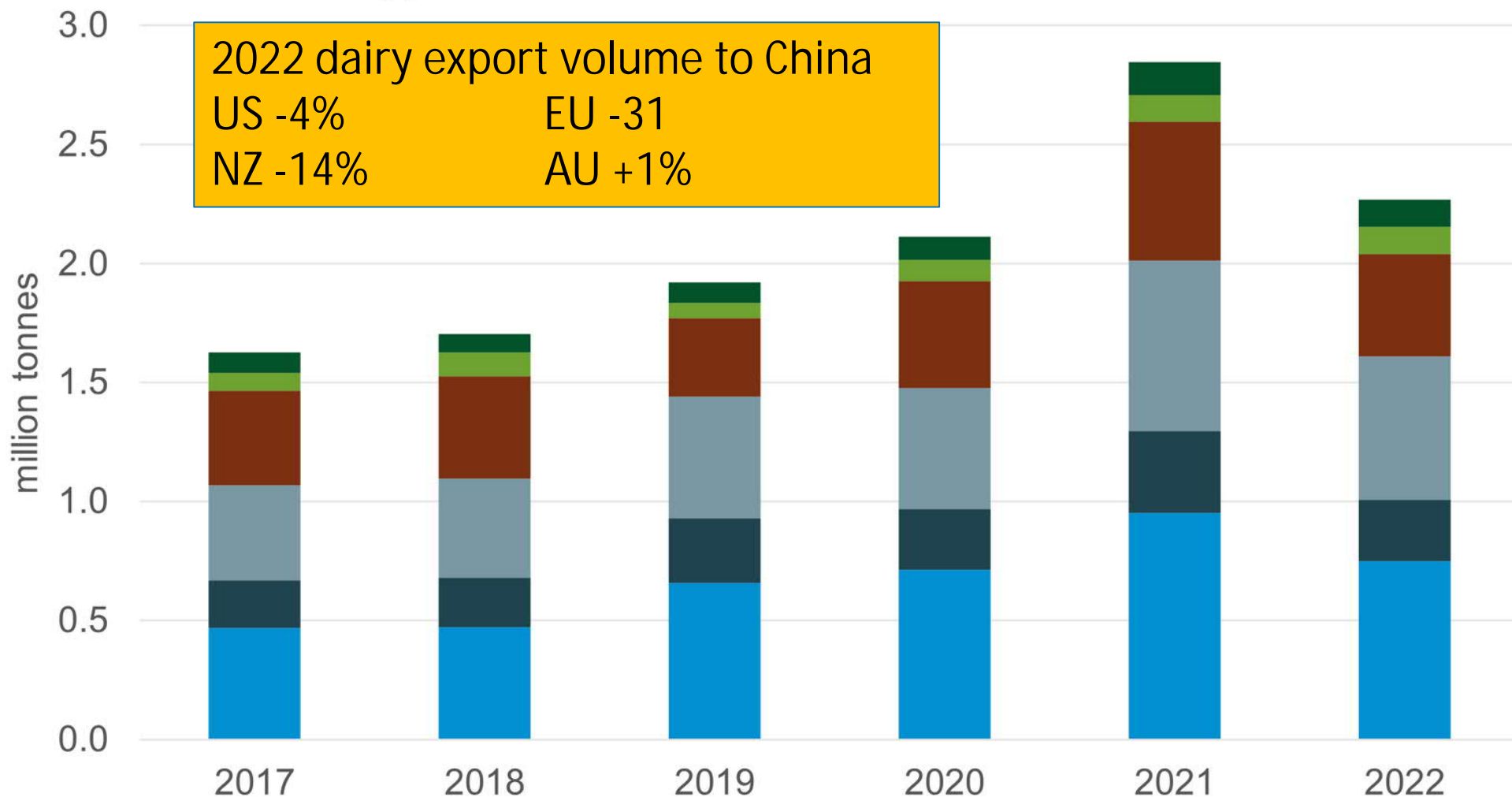
# Consumption Patterns Since 1990

Dairy Product	Non-recession years % change per capita	Recession years % change per capita
Fluid milk	-1.7	-0.9
Cheese	1.5	0.3
Butter	1.4	0.7
Yogurt	4.4	4.9

China	2022				
MMT	Fluid	WMP	SMP	Cheese	Butter
Production	40,350	1,050	25	20	13
Imports	1,050	750	350	155	140
Consumption	41,400	1,800	375	175	153
% imported	2.5	41.7	93.3	88.6	91.5

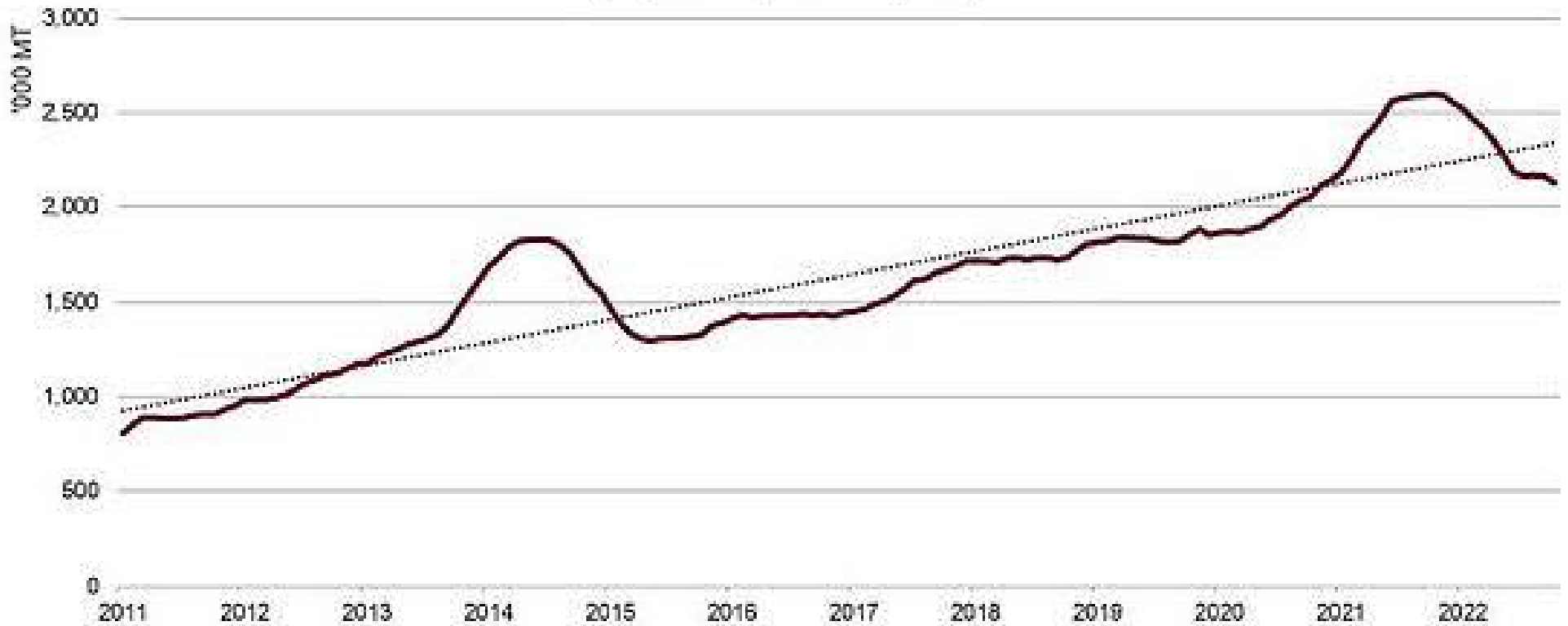
# Chinese dairy product imports, year to date (Jan-Sep)

- Milk and cream
- SMP
- WMP
- Whey products
- Butter and butteroil
- Cheese and curd



Source: compiled by Trade Data Monitor LLC

## Global Dairy Trade to China (Rolling 12 Months, Milk Solids Equivalent)



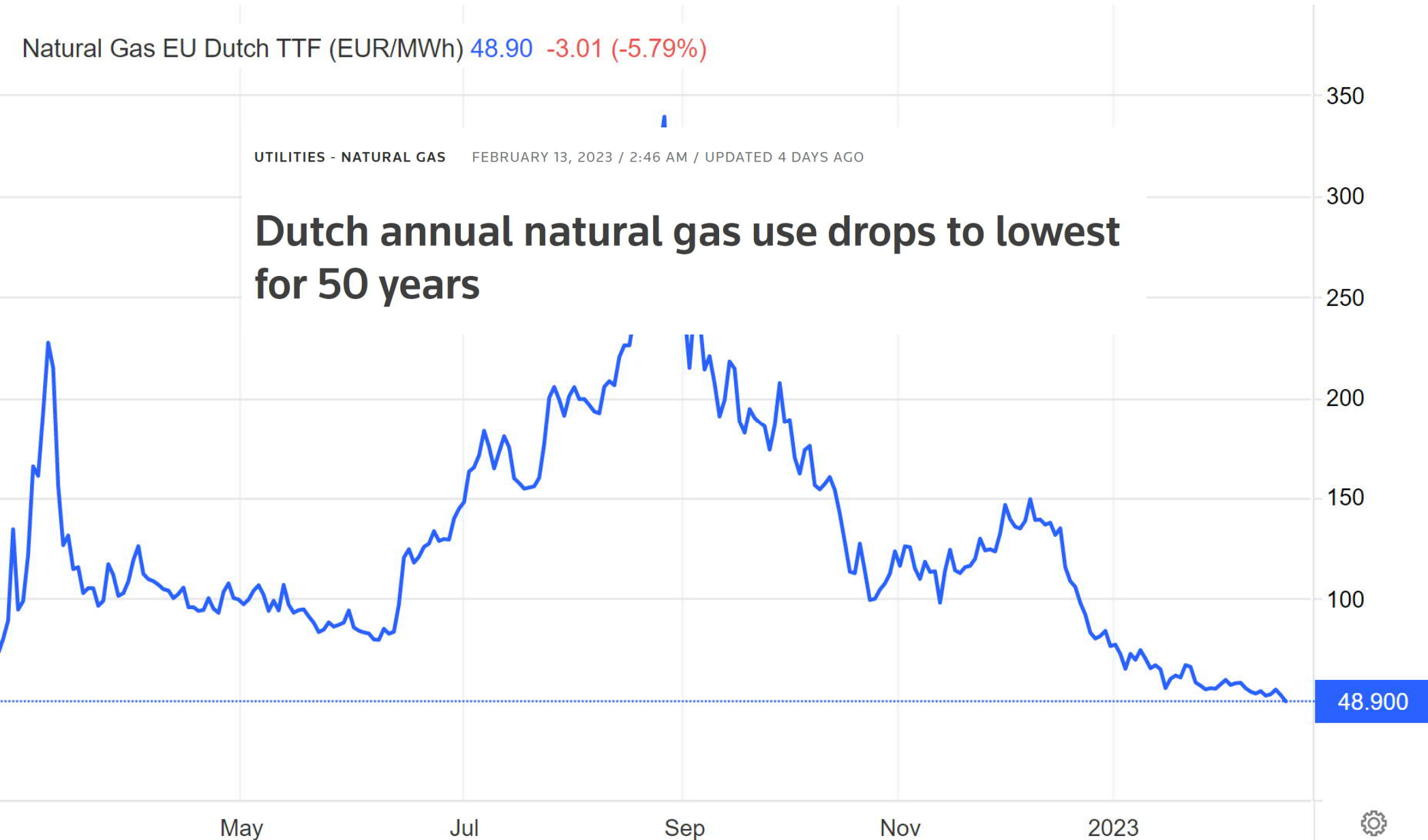
Source: USDEC

# Dutch Natural Gas Price

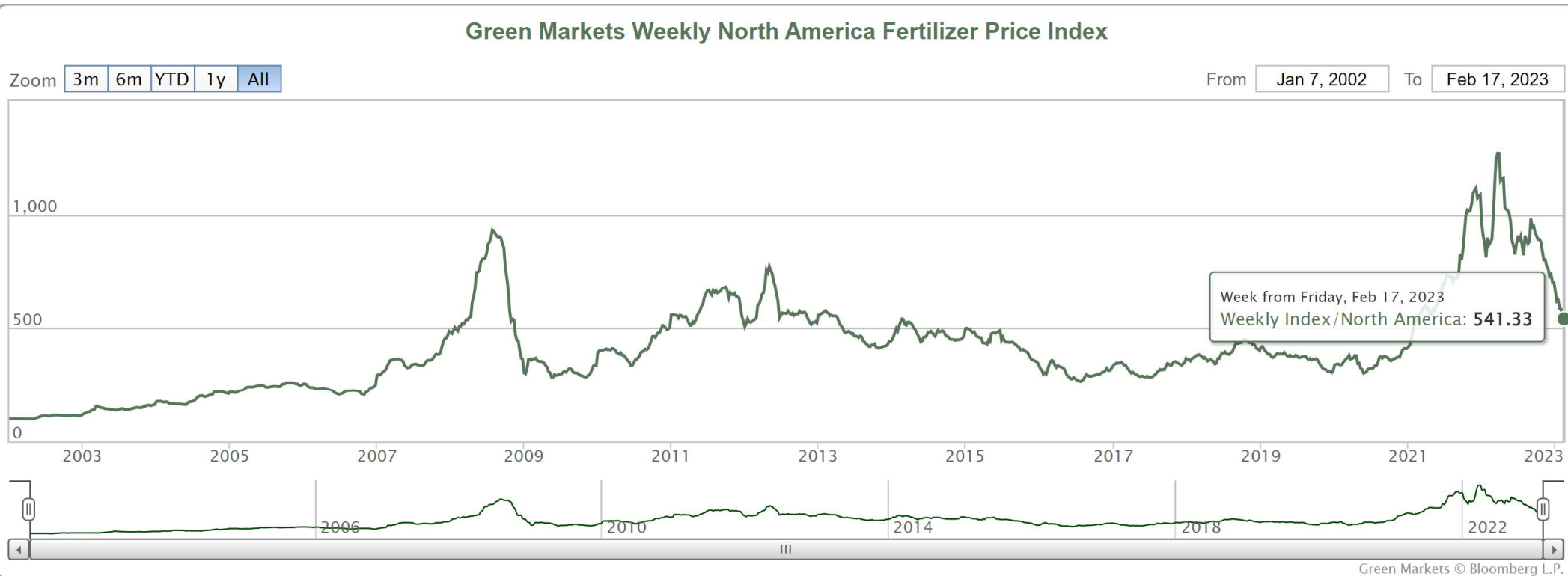
Natural Gas EU Dutch TTF (EUR/MWh) **48.90** -3.01 (-5.79%)

UTILITIES - NATURAL GAS FEBRUARY 13, 2023 / 2:46 AM / UPDATED 4 DAYS AGO

## Dutch annual natural gas use drops to lowest for 50 years



# Fertilizer Price Index



Fertilizer price back to February 2021 levels

# Weather

- **El Nino:** Warmer waters cause the Pacific jet stream to move south of its neutral position. With this shift, areas in the northern U.S. and Canada are dryer and warmer than usual. But in the U.S. Gulf Coast and Southeast, these periods are wetter than usual and have increased flooding.
- **La Nina** is the colder counterpart of El Niño, as part of the broader El Niño–Southern Oscillation (ENSO) climate pattern.
- Affects crops/pasture around the globe.
- The first months of 2023 are projected to be the third consecutive year of La Nina.
- ENSO-neutral conditions are expected to begin within the next couple of months, and persist through the Northern Hemisphere spring and early summer.

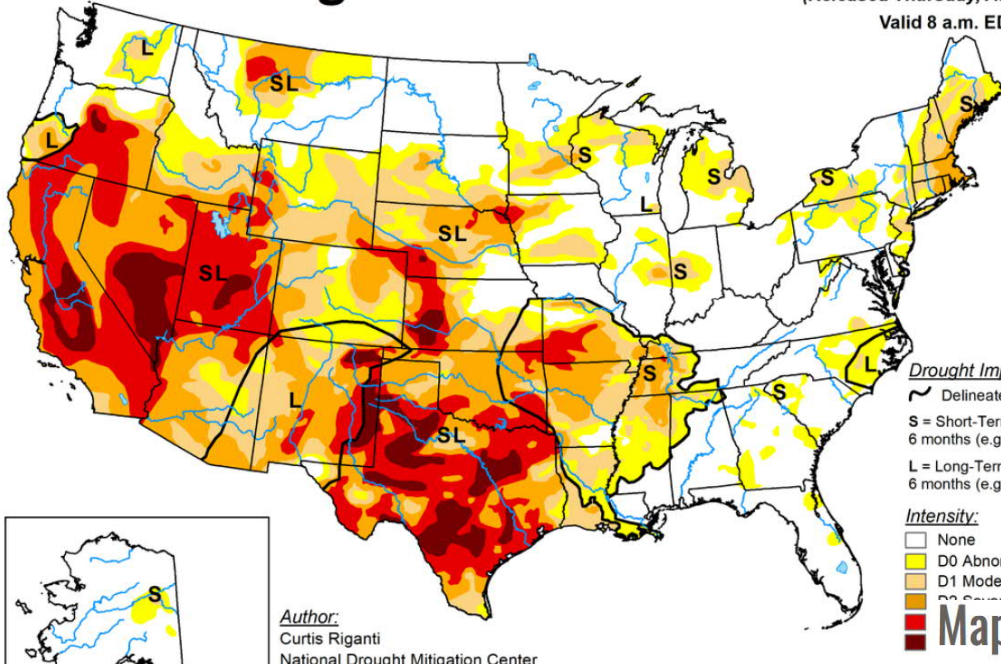


# La Nina Implications

- Dryer/drought
  - Brazil
  - Argentina
  - Texas/Central Plains
  - Africa
  - New Zealand
- Storms
  - Colder/stormier in Northern US
  - More Atlantic Hurricanes
- More precipitation
  - Australia
  - Southeastern Asia (rice)

# U.S. Drought Monitor

August 2, 2022  
(Released Thursday, Aug. 4, 2022)  
Valid 8 a.m. EDT



### Drought Impact Types:

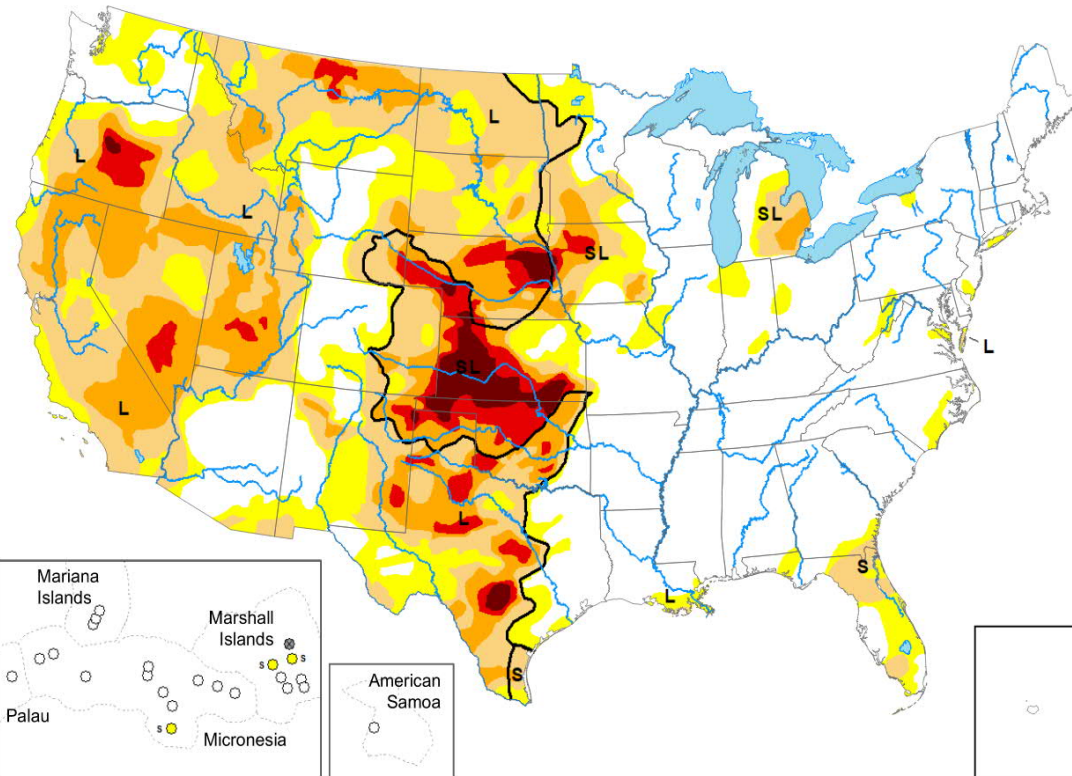
- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

### Intensity:

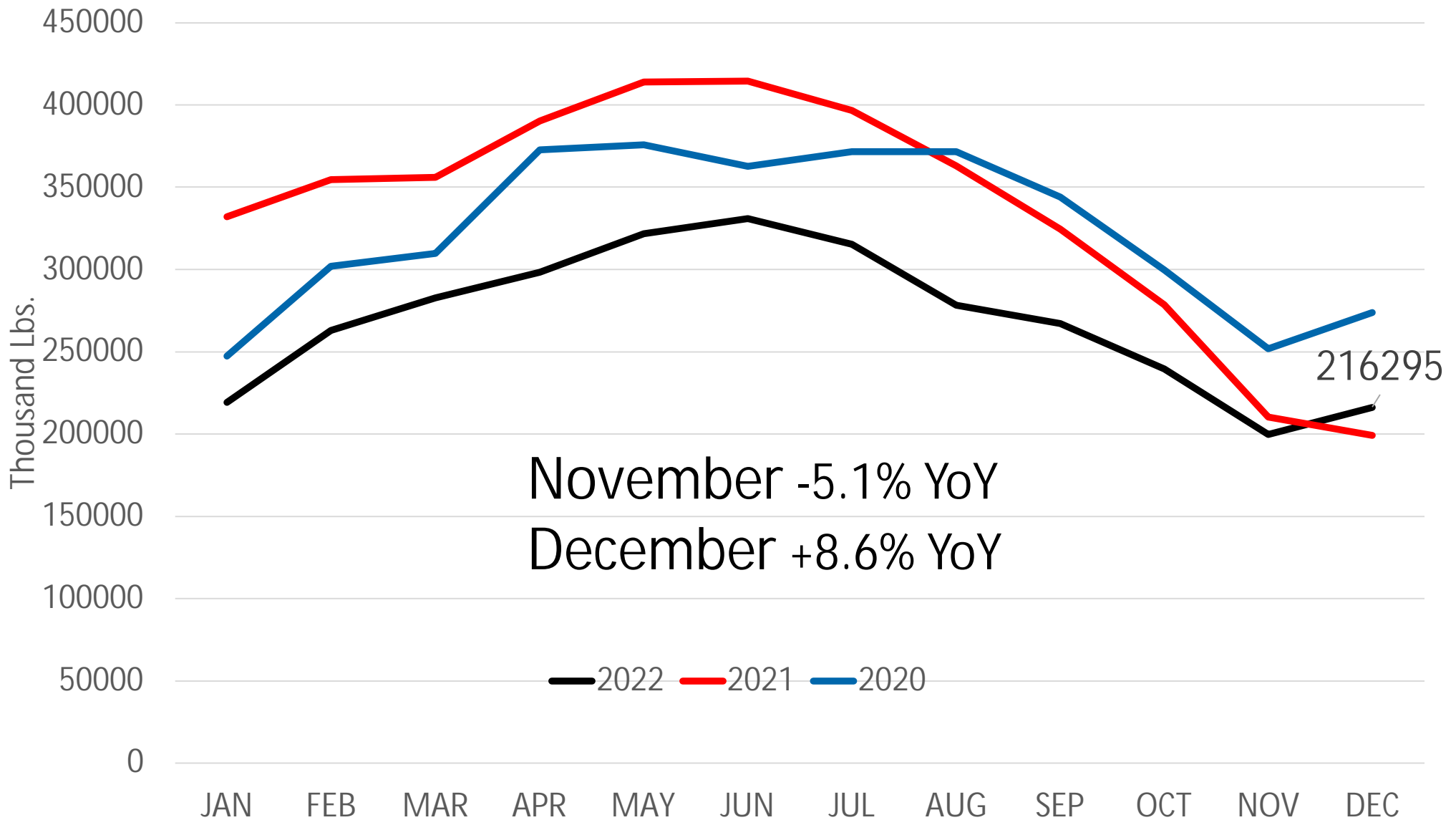
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Extreme Drought

**Map released: February 16, 2023**

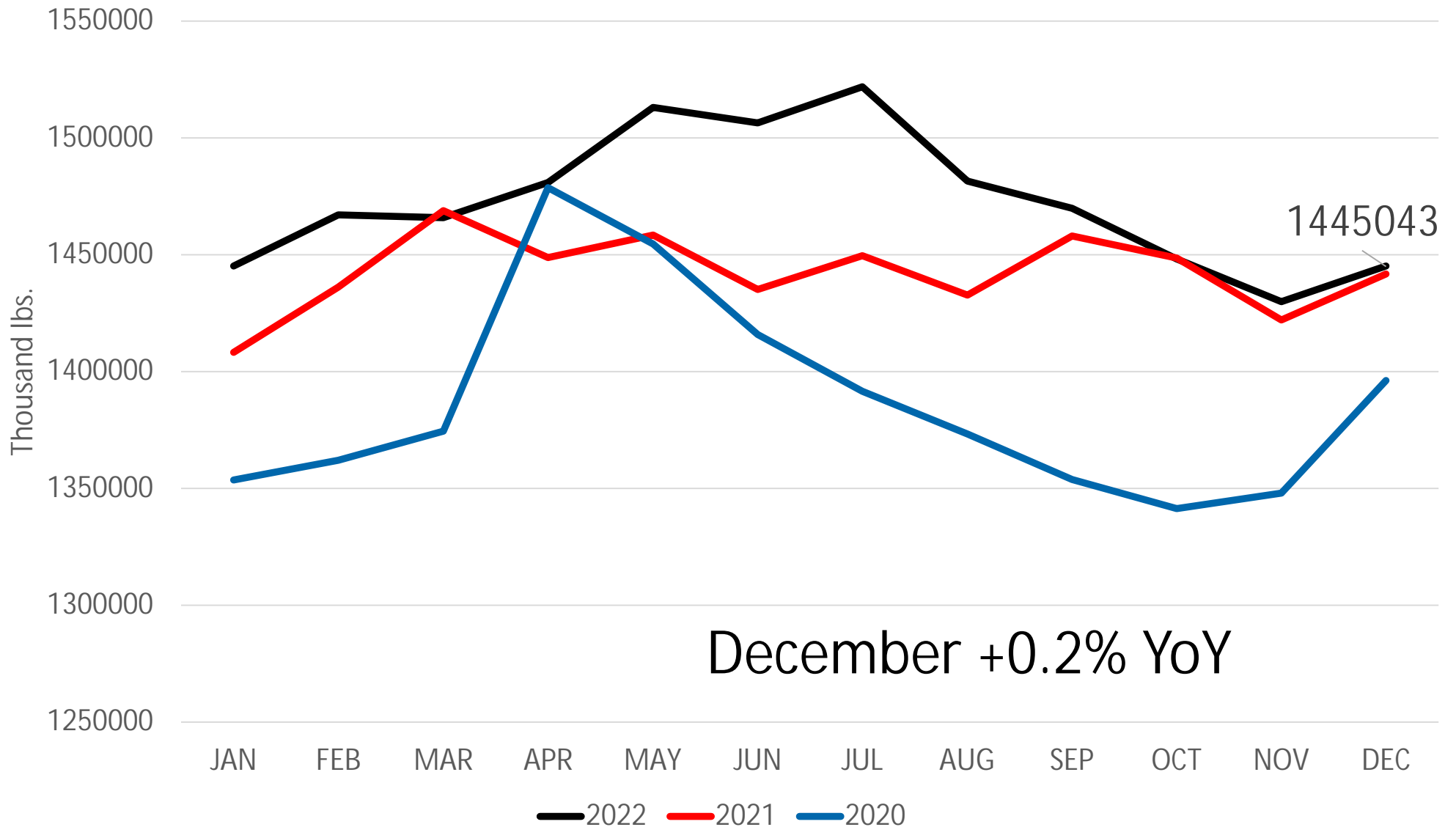
Data valid: February 14, 2023



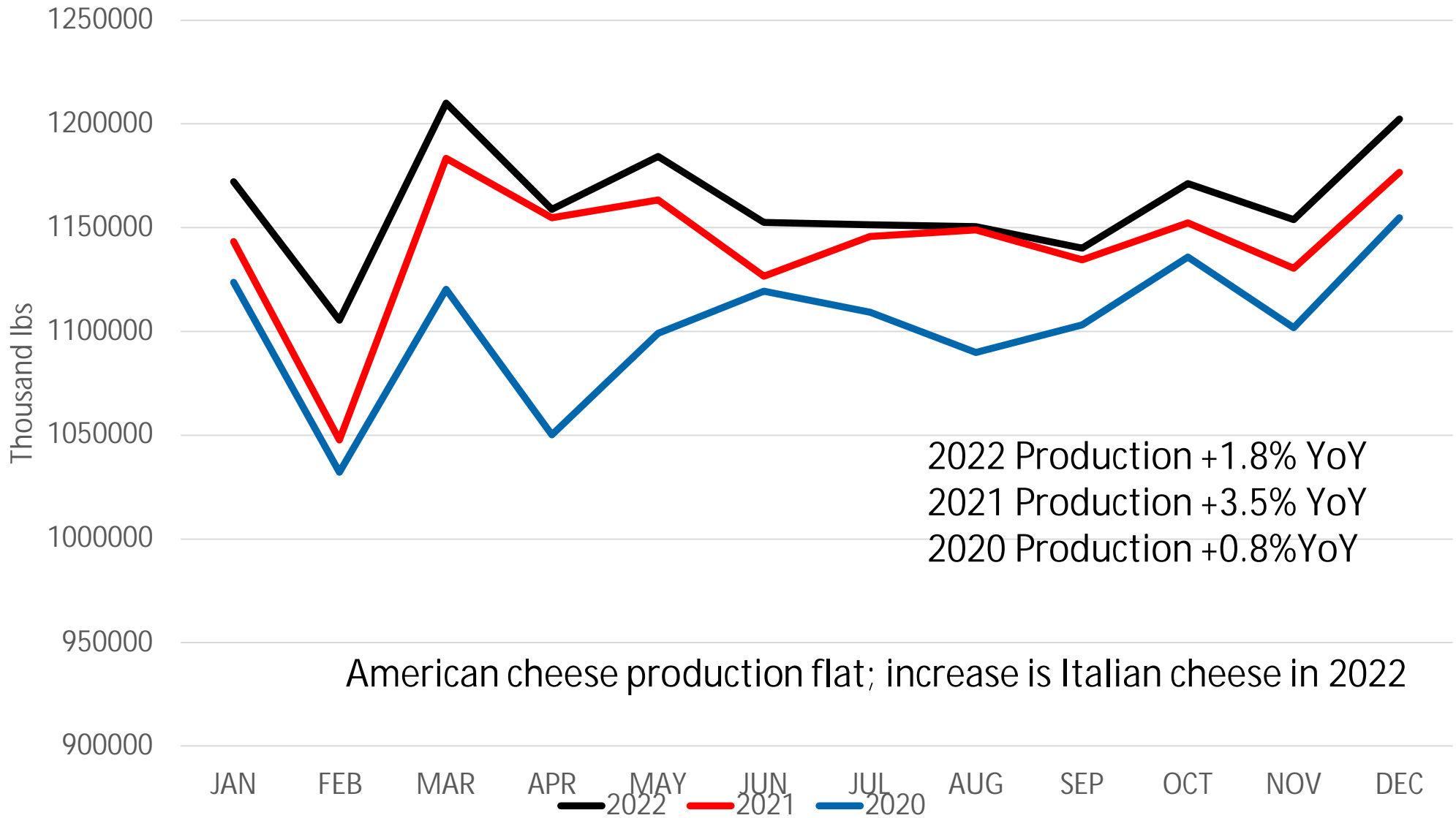
# Butter Stocks



# Natural Cheese Stocks



# Cheese Production



# 2023 Milk Production Forecast

- **New Zealand:** milk production to be flat to slightly lower due to La Nina and high input costs
- **EU:** EU27 dairy herd is forecast to drop below 20 million head in 2023. This will lead to a continued decrease in milk production and deliveries for factory use despite higher farm gate milk prices.
- **US:** milk production is forecast +0.75% in 2023 as weaker milk prices are expected to result in lower cow inventories. Exports are expected to shrink on lower sales of skim milk powder, cheese, and several other products. Prices are lowered for cheese as stocks remain relatively large and domestic demand is expected to remain soft.

# CME Class III & IV Futures Values



■ Class III Futures

■ Class IV Futures

*Updated 2/16/23*

# Mar-23 CME Milk Contract Prices Over Past 120 Days



■ Class III Futures

■ Class IV Futures

Updated 2/16/23



# USDA Prices

## February WASDE

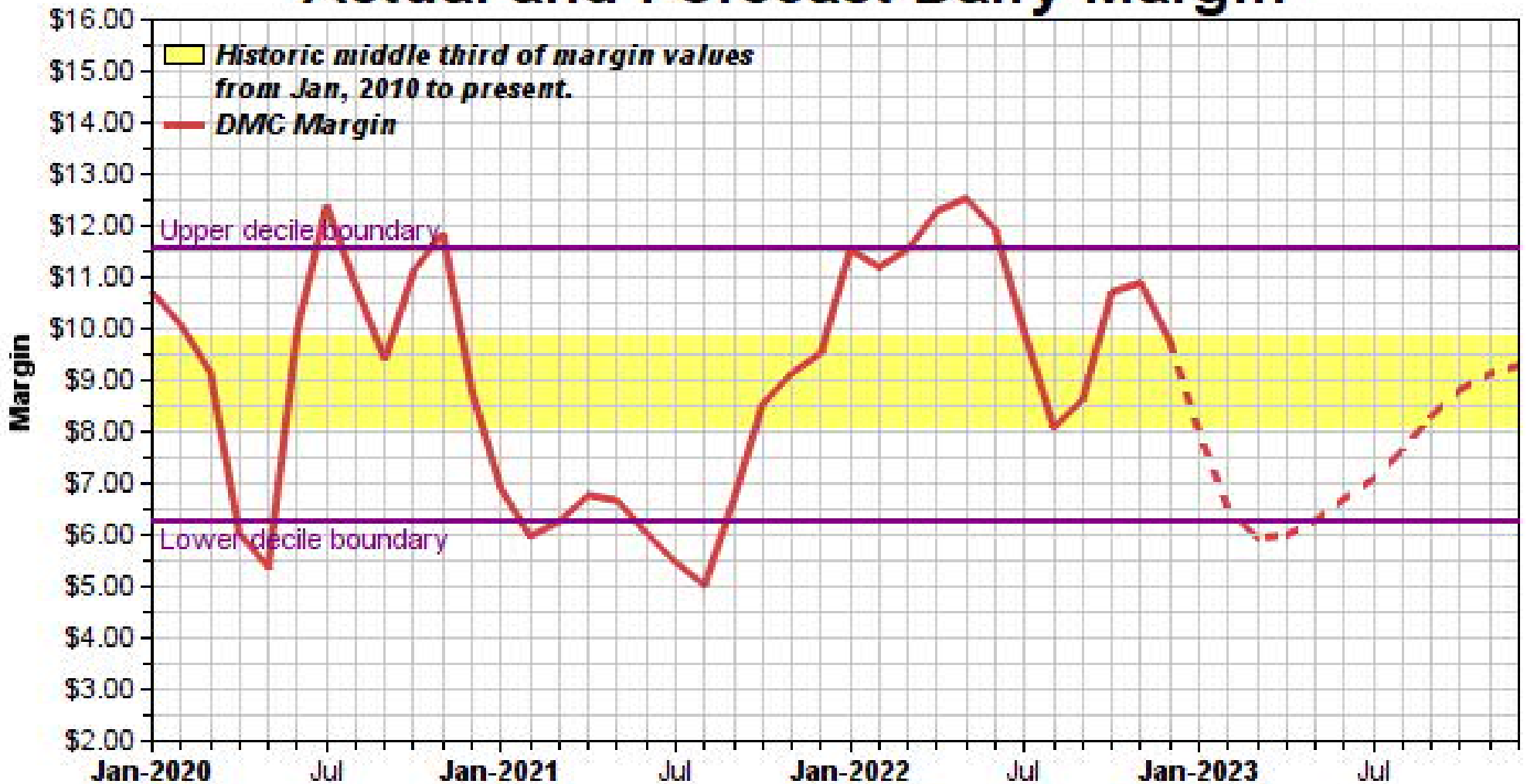
Commodity	2022	2023 Forecast
Corn	\$6.77/bu	\$6.70/bu
Soybeans	\$14.88/bu	\$14.30/bu
Soybean meal		\$450/ton
All Milk	\$25.55/cwt	\$20.70/cwt
Class III	21.94/cwt	\$17.90/cwt
Class IV	\$24.47/cwt	\$18.45/cwt

USDA Prospective Plantings Report March 31

# December '23 Corn



# Actual and Forecast Dairy Margin



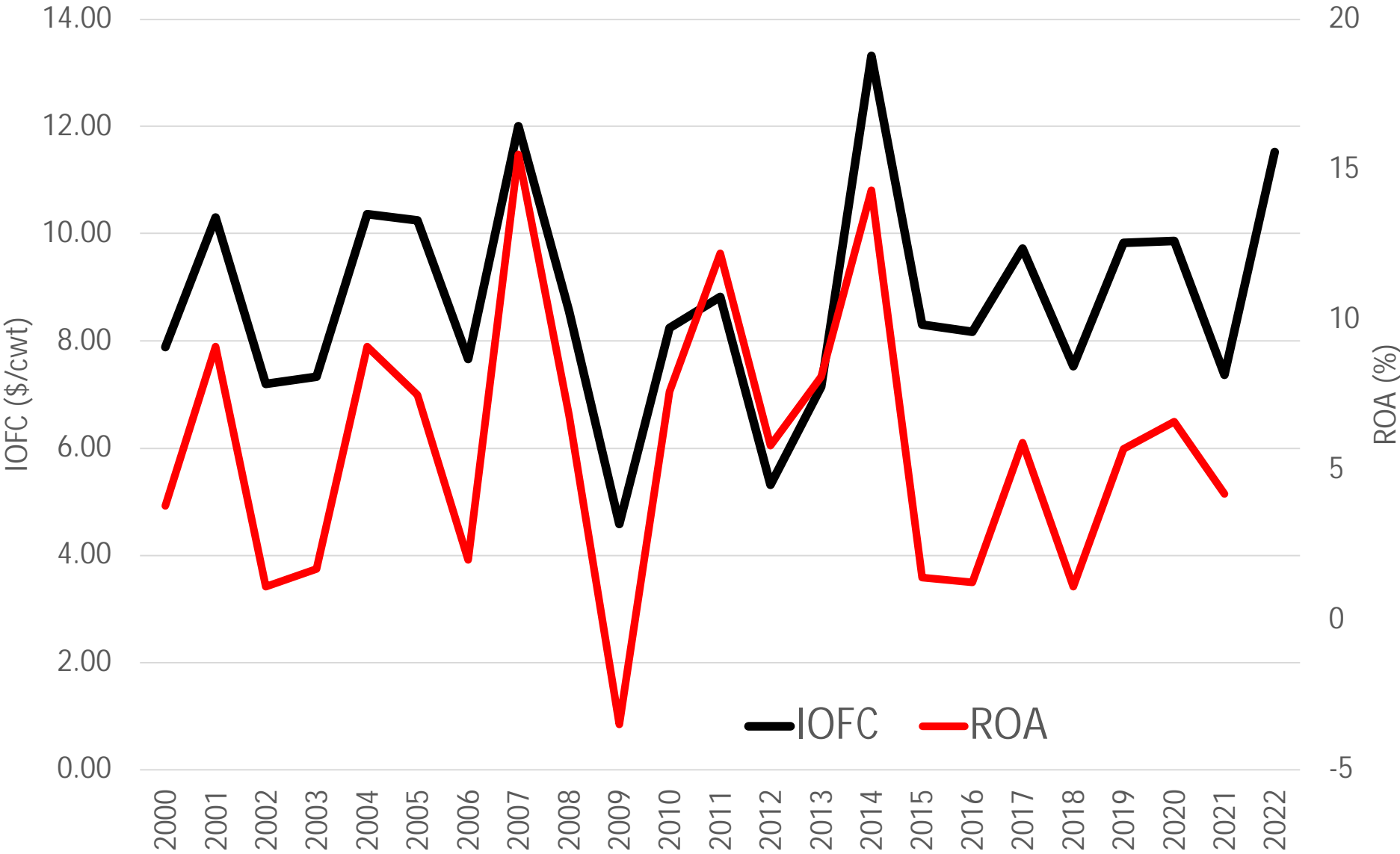
Updated 2/16/23

# DMC Forecast

February 16, 2023

MONTH	ALL MILK PRICE FORECAST (\$/CWT)	CORN PRICE FORECAST (\$/BU)	PREMIUM/SUPREME ALFALFA HAY PRICE FORECAST (\$/TON)	SOYBEAN MEAL PRICE FORECAST (\$/TON)	FEED COST FORECAST (\$/CWT)	DMC MARGIN FORECAST (\$/CWT)
Jan	\$23.31	\$6.58	\$332	\$462.85	\$15.02	\$8.29
Feb	\$21.59	\$6.40	\$331	\$505.71	\$15.12	\$6.47
Mar	\$20.91	\$6.33	\$308	\$509.15	\$14.75	\$6.16
Apr	\$20.92	\$6.28	\$293	\$503.65	\$14.46	\$6.46
May	\$20.95	\$6.25	\$292	\$495.97	\$14.35	\$6.60
Jun	\$21.20	\$6.20	\$285	\$489.35	\$14.16	\$7.04
Jul	\$21.50	\$6.15	\$282	\$483.51	\$14.01	\$7.49
Aug	\$21.85	\$6.02	\$281	\$470.32	\$13.76	\$8.09
Sep	\$22.37	\$5.86	\$278	\$452.36	\$13.42	\$8.95
Oct	\$22.77	\$5.74	\$277	\$436.96	\$13.16	\$9.61
Nov	\$23.17	\$5.64	\$288	\$431.61	\$13.16	\$10.01
Dec	\$23.13	\$5.56	\$281	\$429.24	\$12.97	\$10.16
2023	\$21.97	\$6.08	\$294.05	\$472.56	\$14.03	\$7.94

# IOFC and ROA NY farms



# Dairy Policy

- Farm Bill
  - Dairy Margin Coverage Program
- Other related areas
  - Environment, labor, energy, trade
- Federal Milk Marketing Orders

# Thank You

Chris Wolf  
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